

Functional Projections and Non-Local Relations in Tongan
Nominal Phrases

by

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Graduate Department of Linguistics
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Abstract

This dissertation explores several phenomena within Tongan nominal expressions – interactions amongst determiners, demonstratives, and definiteness; the morphosyntax of pronouns and possessive constructions; and the interactions of nominal aspect with numerals, number, and classification. Several motifs emerge, particularly the distributed nature of classification and quantification within nominal expressions, and the underlying locality of superficially long-distance syntactic relations.

Although Tongan has pre-nominal articles often called definite and indefinite, I show that these encode specificity and non-specificity. Definiteness is marked via an anaphoric demonstrative clitic, the Definite Accent (DA), in the right periphery. A diachronic connection between the DA and spatial demonstratives has previously been shown, yet they do not instantiate the same syntactic category. The DA is now a marker of anaphoric deixis, interpreted as definiteness. It is merged above D^0 and stranded at the right edge of a nominal expression when its complement DP moves into its specifier. The DA selects as its

complement a DP containing [SPECIFIC], and this local selection and movement derive the apparent long-distance relation between articles in the left periphery and the DA on the right.

I decompose the rich paradigm of Tongan pro-forms into several syntactic categories:

Determiners, DPs, Adverbs, and φ^0 s. Possessive pronominal determiners are syntactically derived via cliticization of φ^0 and K^0 to D^0 . Possessive structures also involve predicate-fronting of the possessum. Parallels are drawn to clause-level predicate-fronting and “subject” cliticization.

I also show that several of what have been deemed number markers in Tongan are actually markers of nominal aspect. Most Tongan nouns are Set or General Object nouns; aspect markers derive Set from General nouns by adding an aspectual head (inner Asp^0) with [SHAPE], and they derive Singulative and Collective sets from these by adding an outer Asp^0 which specifies a value for [HOMOGENEITY]. In Tongan, outer aspect is also the locus of [HUMAN] and possibly [DIMINUTIVE]. Number markers pluralize Collective or Singulative Set nominals, and numbers do not count individuals but, rather, Singulative or Collective Sets. The locality of the relation between numerals and aspect is obscured by the robustness and left-headedness of $AspP$, to which numeral clauses are right-adjoined.

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Chapter 1

A Sketch of the Tongan Nominal Expression

Tongan is a Polynesian language, spoken by the approximately 100,000 residents of the Kingdom of Tonga¹ and several tens of thousands of people in other countries.² It is an ergative, isolating,³ V-initial language, as can be seen in (1).⁴

- (1) a. *Na'e haka 'e he fefine 'a e 'ufi*
PAST boil ERG D woman ABS D yam
'The woman boiled the yam.'

¹A census conducted in December 2011 showed a total population of 103,036 (Tonga Department of Statistics 2011).

²Ethnologue (Lewis et al. 2014) lists the resident population of Tonga at 103,000 and the number of Tongan speakers in all countries at 169,120.

³Orthographic conventions in older texts (*e.g.* Mariner & Martin 1817) suggest that earlier linguists saw it as agglutinative; that is, what are now treated as phrases were once analyzed as single words. By 1924, the orthographic convention reflects a shift towards seeing Tongan as an isolating language (see Gifford 1924). This treatment seems to be based on the stress pattern of Tongan (discussed briefly in Chapter 2). At what is now generally treated as word level, primary stress falls on the penultimate mora, but secondary stress is somewhat less predictable. However, the boundaries of phonological words in the language are somewhat flexible, as monomoraic particles can be cliticized leftwards or rightwards within the phrase (Taumoefolau 2002; Anderson & Otsuka 2006). In fact, whereas most authors treat the pre-verbal tense-aspect markers (TAMs) and pronominal particles (clitics) as separate lexical items bound phonologically, Kikusawa (2002) and Ball (2008) treat them as single words inflected for agreement. See Kikusawa 2002:58-75 and Ball 2008:110-116, 122-127 for elaboration.

⁴The determiner *he*, phonologically /he/, is realized phonetically as [e] (and sometimes \emptyset) except after the ergative marker *'e* and the dative case-marker/locative preposition *'i* (Churchward, 1959:23). Tongan spelling reflects this allomorphy. The sequence *'a* (ABS) + *he* (SPEC) is written *'a e* (as two words) throughout Tchekhoff (1981) but *'ae* (as one word) elsewhere (*e.g.* Churchward 1953, 1959; Dukes 1996; Otsuka 2000). Tongan language publications I consulted from the US (National Diabetes Education Program 2007), New Zealand (Auckland City Hospital 2010), Australia (NSW Department of Community Services 2010), and Tonga (Ministry of Information and Communications 2014) all use *'a e* (*i.e.* two items); therefore, I do the same in my own examples.

- b. *Na'e nofo 'a e tamasi'i*
 PAST stay ABS D child
 'The child stayed.'

(Tchekhoff 1981:10-11)⁵

Although VSO is the unmarked word order in Tongan (Tchekhoff 1981; Dukes 1996; Otsuka 2000, 2005b), both VSO and VOS word orders are seen,⁶ as shown in (2).

- (2) a. VSO
Na'e 'ave 'e he faiako 'a Sione.
 PAST bring ERG D teacher ABS Sione
 'The teacher brought Sione.'

- b. VOS
Na'e 'ave 'a Sione 'e he faiako.
 PAST bring ABS Sione ERG D teacher.
 'Sione was brought by the teacher.'

(Otsuka 2000:240)

⁵A note on the glosses: Where authors have provided glosses for the data I cite, I use this data with minimal adaptation in order to maintain consistency. Where authors have not provided glosses, I have created my own, consistent with those used by other generative syntacticians and/or with the analysis presented in this dissertation, based on the authors' own definitions of the relevant morphemes. For example, although 'a and 'e are variously analyzed (and glossed) as "prepositions" (Churchward 1953, 1959), "focus markers" (Shumway 1971), and "function markers" (Tchekhoff 1981), I follow generative syntacticians such as Chung (1978), Dukes (1996), and Otsuka (2000), *et al.* in treating them as absolutive and ergative case markers, respectively, and, accordingly, glossing them ABS and ERG. *Ha* and *he* are variously analyzed (and glossed), respectively, as 'indefinite' and 'semi-definite' (Churchward 1953, 1959); 'a' and 'the' (Tchekhoff 1981, Chung 1978); 'nonspecific' and 'specific' (Dukes 1996); or 'indefinite' and 'definite' (Otsuka 2000). I follow Dukes (1996), for reasons I explain at length in Chapter 2, in treating them as nonspecific and specific determiners and glossing them as NONSPEC and SPEC. Glosses for lexical words are taken, where applicable, from authors' own glosses or translations. Where unglossed data is used, glosses are taken from Churchward's (1959) *Dictionary*.

⁶Here, I use *subject* to denote the ergative argument of a transitive sentence or the absolutive argument of an intransitive sentence, and *object* to denote the absolutive argument of a transitive sentence. In fact, the determination of subjecthood and objecthood in ergative languages is a matter of some debate, and a single solution may not hold cross-linguistically (see, *e.g.*, Chung 1972, Dukes 1996, Otsuka 2000 for discussion of this matter in Tongan, specifically). Furthermore, it is debatable whether Polynesian languages, being both V-initial and ergative, have grammatical subjects at all (see, *e.g.* Massam & Smallwood 1997, Fischer 2000a, Massam 2001b). Such questions are beyond the scope of this dissertation, the focus of which is the internal structure of nominal expressions in Tongan, and the use of *subject* and *object* here is purely descriptive and atheoretical.

Despite the passive translation in (2b), Otsuka (2000:240-242) does not consider the VOS word order to be syntactically passive but, rather, the effect of scrambling. Churchward (1953) similarly notes that VOS is only pragmatically, rather than syntactically, similar to the passive voice in English, serving simply to emphasize the object.

The nominal phrase in Tongan can be represented templatically as in Figure 1.

FIGURE 1: ORDER OF ELEMENTS IN THE TONGAN NOMINAL PHRASE⁷

determiner (D)	number (#)	outer aspect	inner aspect (Asp _i)	adjective	Noun	spatial Demonstrative (Dem _{sp})	adjectives (Adj)	possessor	numeral	relative clause (CP _{REL})	anaphoric demonstrative (Dem _{ANA})	universal quantifier (Q)
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As Figure 1 shows, the left periphery of the nominal phrase includes determiners (D), number markers (#⁰), and inner and outer nominal aspect markers (Asp_i). Immediately to the left of the head noun is a pre-nominal adjective position; as discussed below, this position is restricted to a very small set of adjectives. To the right of N⁰ are the spatial demonstratives (Dem_{sp}), the default position for adjectives (Adj), possessors (PossP), numerals (preceded by

⁷As will be seen in the following chapters, the canonical order of post-nominal modifiers is not entirely clear. They seem to be subject to some scrambling and inter-speaker variation. For example, the spatial demonstrative particles are cliticized either to the noun or to one of the other post-nominal modifiers (most often, the first adjective). Likewise, the relative order of possessor and numeral phrase seems to be somewhat variable.

a complementizer) (CP_{NUME}), anaphoric demonstratives (the so-called “definite accent”) (Dem_{ANA}), and the universal quantifier (Q). Where elements are separated by a dashed line, this indicates that their order is subject to variation,⁸ and their canonical order is unclear. Also, it is worth noting that not all of these elements co-occur; for example, I have found no examples in which relative clauses and spatial demonstratives co-occur, and I have elicited them only with difficulty. I am unaware of any textual data in which more than four of the post-nominal elements co-occur, and while I have been able to elicit acceptance of longer nominal expressions from my consultant, she has usually rejected them later.

The primary goal of this dissertation is to examine several of these elements in detail, including their internal morphosyntax and the relations that hold amongst them. Despite the generally isolating nature of Tongan, certain elements are highly synthetic; I decompose these and, in some cases, propose syntactic operations by which they are generated. I also show that while some relations within the nominal expression seem to hold at a long distance, they are in fact underlyingly local – specifically, the relations between a determiner (in the left periphery) and an anaphoric demonstrative or universal quantifier (on the right); between a determiner and a post-nuclear possessor; between aspect and post-nominal adjectives; and between aspect and numeral clauses. In all of these cases, the appearance of a long-distance dependency results from local movement around or right-adjunction to a heavy constituent containing NP. Other relations of interest, such as that between number and nominal aspect, are also discussed. I also analyze the syntax of numerals in Tongan, which is highly complex, showing them to be clausal constructions.

Before proceeding to analysis and a roadmap of the dissertation, I will present a brief catalogue of the elements associated with each of these positions.

⁸Not only is the order of elements subject to variation, but judgements about the best order of elements are subject to inter- and intra-speaker variation, suggesting that it may be governed by a combination of pragmatics, prosody, and stylistic preference.

1.1. Elements to the Left of N⁰

1.1.1. Determiners

There are two different types of determiners in Tongan. The basic ones are particles which mark N⁰ as specific (henceforth glossed SPEC) or nonspecific (NONSPEC) (3) and may additionally mark it as diminutive (-DIM) (“emotional” in the terminology of Churchward 1953) (4).^{9,10}

- (3) a. *'Oku kumi 'a Sioasi ki ha fefine poto.*
 PRES seek ABS Sioasi DAT NONSPEC woman clever
 ‘Sioasi is looking for a clever woman’ (any clever woman)
- b. *'Oku kumi 'a Sioasi ki he fefine poto.*
 PRES seek ABS Sioasi DAT SPEC woman clever
 ‘Sioasi is looking for a clever woman’ (a specific one)

(Hendrick 2005:914)

⁹There are two problems that make it challenging to provide accurate glosses for the particles *'i* and *ki*. First, it is unclear whether there is a distinction between case markers and prepositions in Tongan. Secondly, whichever class *'i* and *ki* belong to, it is difficult to distinguish between them. They are variously treated as locative prepositions (Churchward 1959, Otsuka 2000), oblique prepositions (Chung 1978), or case-markers/prepositions (Duke 1997). Völkel (2010) treats *'i* as a locative preposition and *ki* as an allative preposition. They are glossed, respectively, as ‘at’ and ‘to’ (Churchward 1953, 1959; Chung 1978), ‘in’ and ‘to’ (Otsuka 2000), or ‘LOCATION’ and ‘GOAL’ (Dukes 1996). Churchward makes no distinction between case particles and prepositions, treating even the ergative and absolutive particles as prepositions. Otsuka (2000) distinguishes them according to whether the argument they introduce is assigned a theta-role by the verb – oblique arguments, in her analysis, are not assigned a verbal theta role, and thus they are embedded within PPs (258). In terms of differentiating between *'i* and *ki*, Chung (1978:253) notes that the choice to use one or the other “is usually lexically governed, but sometimes determined by factors such as the animacy of the direct object or its distance from the subject” – thus, it would seem that any meaning difference is sometimes syntactic and sometimes semantic or pragmatic. Teasing apart these distinctions is beyond the scope of this dissertation; I treat both as dative case markers, glossed DAT, for simplicity.

¹⁰The *he/ha* distinction is described in traditional literature (e.g. Churchward 1953, Clark 1974, Tchekhoff 1981) as “semi-definite/indefinite” and in more modern literature (e.g. Dukes 1996, Hendrick 2005) as “specific indefinite/non-specific indefinite.” I will be adopting the latter terminology; see discussion in Chapter 2. Definiteness is marked outside of the determiner system, as will be seen below and discussed at length, also in Chapter 2.

- (4) a. *Kuo lavea si'a tamasi'i*
 PERF hurt NONSPEC-DIM child
 'Has a child been hurt?'
- b. *'Oku hela 'a si'i hōsi*
 PRES tired ABS SPEC-DIM horse
 'The poor horse is tired.'

(adapted from Churchward 1953:23, 24)¹¹

Also found in D^0 are a massive series of possessive pronouns. These, like articles, mark specificity and diminutivity of the possessum; they also encode the ϕ -features of the possessor and indicate one of two types of possession (*subjective* or *objective*,¹² henceforth glossed GEN_{SUB} and GEN_{OBJ}). Due to the rich ϕ -system of Tongan (four persons and three numbers), this yields a paradigm of 96 possessive determiners (see Chapter 2 for a detailed discussion of these and other pronominal paradigms in Tongan – including two other syntactic categories of possessive pronouns). A few examples are provided in (5) and (6).

- (5) a. *'Oku 'ikai ha'anau tokonaki.*
 PRES NEG NONSPEC- GEN_{SUB} -3.PL provision
 'They haven't any provisions'
 (*lit.* 'Any-their provisions are not.')
- b. *ha + 'a + nau*
 NONSPEC + GEN_{SUB} + 3.PL
 'their' (indefinite/nonspecific)

(adapted from Churchward 1953:271)

¹¹Where I have added glosses to data that lacks it in the cited source, citations for those data are cited as "adapted from [Author]" to reflect this.

¹²The nature of and proper terminology for the two types of possession found in Tongan and many other Polynesian languages is the subject of considerable debate. I will address this question at length in Chapter 3.

- (6) *hono* *sote*
 SPEC-GEN_{OBJ}-3.SG shirt
 ‘his shirt’

(adapted from Churchward 1953:142)

1.1.2. Number markers

Moving rightward, the next element found in the left periphery is #⁰ – the number markers.

As illustrated in (7), *ongo* marks dual number (7a); *ngaahi* marks plural number (7b).

Singular number is unmarked¹³ (7c).

- (7) a. *ha* *ongo puha* (*'e ua*)
 NONSPEC DU box (SBJV two)
 ‘two boxes’
- b. *hotau* *ngaahi kaume'a*
 SPEC-GEN_{OBJ}-1INC.DU PL friend
 ‘our friends’
- c. *hotau* *kaume'a*
 SPEC-GEN_{OBJ}-1INC.DU friend
 ‘our friend’

(adapted from Churchward 1953:27,29)

1.1.3. Nominal aspect markers

One further step to the right are a series of particles which I call nominal aspect markers.

Some of these have been treated in the literature as number markers; however, I will show that the two categories are syntactically distinct. Since the notion of nominal aspect is not uncontroversial, I will digress for a moment to explain my choice of this terminology.

¹³The plural marker *ngaahi* is optionally unpronounced in contexts where plurality is understood or expressed via the quantifying adjective *ni'ihī* ‘several,’ the universal quantifier *kotoa* ‘all, every,’ or a cardinal numeral (Churchward 1953:32).

The term *nominal aspect* is introduced by Rijkhoff (1991, 2002), who describes it as “concerned with representations in the spatial dimension,” just as verbal aspect is “concerned with representations in the temporal dimension.” In other words, it is something which “packages” the denotatum of a noun in the same way that verbal aspect “packages” the denotatum of an event. He coins the term *Seinsart*, a parallel to *Aktionsart*, which refers to a noun’s specification for homogeneity and shape. He claims that nominal aspect markers occur with nouns whose *Seinsart* is underspecified and that some elements thought to be number markers are actually nominal aspect markers.

Borer (2005), citing Rijkhoff (1991) but not adopting his terminology, develops further the notion that classifiers exist to “package” nominals. She claims that all nouns, in all languages, are underspecified for the count/mass distinction and are read as mass unless they are “portioned out” by morphosyntactic means. This is accomplished in some languages with classifiers and in others with plural marking or articles such as the English determiner *a*.

Wiltschko (2009, 2012) and Armoskaite and Wiltschko (2012), also citing Rijkhoff, develop the notion of nominal aspect further. Wiltschko (2009) argues that the mass-count distinction is not the only type of nominal aspect and that in some languages, aspect may specify characteristics such as animacy. In formalizing her system, Wiltschko (2009) proposes that markers of nominal aspect reside in Asp^0 , a functional head within DP which interacts with number (Num^0 in her representation). Armoskaite and Wiltschko (2012) distinguish between outer (or grammatical) Asp^0 , which they place between D and nP , and which they argue includes flexible Gender and other types of nominal aspect, and inner (or lexical) Asp^0 , which they place between n and \sqrt{N} , and which they argue is the locus of fixed Gender and other types of *Seinsart*.

All of the above authors treat aspect or related concepts (individuation) as distinct from number but interacting with it. Aspect is the grammatical reflex of characteristics such as shape, divisibility (homogeneity, in Rijkhoff’s (2002) terms), speaker evaluation (Armoskaite & Wiltschko 2012), and even animacy (Wiltschko 2009, 2012). While Churchward (1953)

treats what I have identified as nominal aspect markers in Tongan as number markers, he notes that they can co-occur with *ngaahi* (plural), which I treat as a true number marker, but not with each other. I take the lack of complementary distribution between two subsets of what he calls number markers as evidence that they represent two different categories; *ngaahi*, a true number marker, occupies #⁰, whereas the pluralizing nominal aspect markers occupy outer Asp⁰, the projection immediately below.¹⁴

I have chosen to adopt the terminology of Rijkhoff (1991, 2002), Wiltschko (2009, 2012), and Armoskaite and Wiltschko (2012), rather than that of Borer, for two main reasons: Firstly, there is a rich tradition of using the term *classifier* to refer to a specific type of morphological element whose distribution is quite unlike that of the nominal aspect markers in Tongan (and which, I will show in Chapter 4, also exists in Tongan); and second, nominal aspect in Tongan goes beyond the count-mass distinction and includes animacy and possibly other features, as will be shown later.

The difference between nominal aspect markers and number markers in Tongan is illustrated in (8), below. As is illustrated by the contrasting between (8a,b) and (8c,d), aspect markers encode more information than do number markers. Here, the aspect marker *kau*, described by Churchward (1953) as a plural marker for nouns denoting humans, adds specification for humanness to otherwise unspecified nouns (8c). Others contribute more subtle meaning, such as distributivity or affection towards the referent of the noun. Additionally, if these were merely classificatory number markers, one would expect to find them in complementary distribution with *ngaahi*, but as (8d) shows, they are not. Here, *ngaahi* and *kau* co-occur, indicating that the head nominal is not only plural and human but in multiple groups.

¹⁴Outer aspect is the locus of [HOMOGENEITY], a feature which indicates whether the set in which a noun's denotatum is "packaged" is singleton or non-singleton. Inner aspect is the locus of [SHAPE], a feature which determines countability. This is discussed at length in Chapter 4, wherein I develop my own syntactic analysis of nominal aspect and show how it applies to Tongan.

- (8) a. *hiva*
sing
'sing,' 'song,' or 'singer'
- b. *ngaahi hiva*
PL sing
'songs'
- c. *kau hiva*
ASP sing
'singers'
- d. *ngaahi kau hiva*
PL ASP sing
'some groups of singers'
(can be read pragmatically as 'some choirs')
- (adapted from Churchward 1953:31)

Not all nominal aspect markers can express plurality. In (9), the nominal aspect markers *fo'i* 'fruit of' and *fu'u* 'tree' serve an individuating function and disambiguate a piece of fruit from the tree which bears it and from the fruity substance of which it is made. In the singular, the 'piece of fruit' and 'fruit tree' readings are available without *fo'i* or *fu'u*. However, *fo'i* or *fu'u* are mandatory when either a plural marker or a numeral is present, since *moli* 'orange' without an aspect marker is an uncountable noun.¹⁵

- (9) a. *ha moli*
NONSPEC orange
'an orange tree,' 'an orange,' 'some oranges,' 'some orange'¹⁶

¹⁵As will be explained in Chapter 4, *moli* is not a mass noun (although a mass interpretation of *ha moli* is available when no aspect marker is present) but a general noun, meaning that the feature [SHAPE] is contrastively absent and [HOMOGENEITY] is non-contrastively so (in mass nouns, [SHAPE] is contrastively absent, and [HOMOGENEITY] is present).

¹⁶Churchward (1953) lists the first three as possible translations. My consultant (LMK) indicates that the fourth is also acceptable – for instance, when describing a situation in which one ate mashed orange or an unspecified portion of an orange.

- b. *ha fo'i moli*
 NONSPEC ASP orange
 'an orange'
- c. *ha ngaahi fo' i moli*
 NONSPEC PL ASP orange
 'some oranges'
- d. *ha ngaahi fu'u moli*
 NONSPEC PL ASP orange
 'some orange trees'
- e. **ha ngaahi moli*
 NONSPEC PL orange
 intended: 'some oranges' or 'some orange trees'

(FN:LMK 2009)

Note that *fu'u* in (9d) is not a noun meaning 'tree' but an aspect marker which packages the noun as a tree-form. This is illustrated in (10), where the same aspect marker can be used to disambiguate 'tree' from 'plant.' I propose that the pluralizing and countability-determining aspect markers reside in different heads – outer and inner aspect, respectively – each of which is the locus of a different feature.

- (10) a. *akau*
 plant
 'a tree' or 'a plant'
- b. *fu'u akau*
 ASP plant
 'tree'

(adapted from Churchward 1959:809)

1.1.4 Pre-nominal adjectives

The final element to the left of N^0 is a pre-nominal adjective (Adj^0) position, shown in (11) and (12). This is not the canonical position of adjectives in Tongan; in fact, only a small subset of them can occur here. These are *fu'u* (synonymous with the predicate and post-

nominal adjective *lahi*) ‘big;’¹⁷ *ki’i* (synonymous with the predicate and post-nominal adjective *si’i*) ‘small;’ *uluaki* ‘first;’ *mu’aki* ‘first in time;’ and the ordinal numerals *ua* ‘second’ (*lit.* ‘two’) *tolu* ‘third’ (*lit.* ‘three’), etc.; and *toe* ‘other, additional.’

- (11) a. *ha fu’u me’a*
 NONSPEC big thing
 ‘a big thing’
- b. *ha toe me’a*
 NONSPEC other thing
 ‘another thing,’ ‘an additional thing’

(adapted from Churchward 1953:190)

- (12) *’i he kakato ’a e valungofulu ta’u ’o Siale*
 DAT SPEC being-complete ABS SPEC eighty year GEN Siale
 ‘On Siale’s reaching his 80th birthday’
 (*lit.* ‘On the being-complete of the 80th year of Charlie’)

(adapted from Churchward 1953:174)

1.2. Elements to the right of N⁰

1.2.1 Spatial demonstratives

Tongan has three demonstrative clitics (the language also has a series of demonstrative pronouns, but these will not be considered here, as they constitute independent nominal phrases). Two of these mark spatial deixis, and the third marks anaphoric deixis, interpreted as definiteness. The anaphoric demonstrative, which is described in Section 1.2.5, is merged high, adjacent to D⁰, and is spelled out at the right edge of a nominal expression due to subsequent movement of DP. The deictic demonstratives occupy a distinct position, either

¹⁷While it is possible that pre-nominal *fu’u* and *ki’i* (and possibly other pre-nominal adjectives) are, in fact, inner aspect markers, there is some apparent evidence to the contrary. For example, *fu’u* can co-occur with *fo’i* (which I will argue in Chapter 4 is a marker of inner, not outer, aspect). For now, then, I assume that the pre-nominal adjective and inner aspect marker *fu’u* are polysemous.

immediately after the head nominal (this seems to be preferred in most cases) or following a post-nominal adjective (this variation is discussed at length in Chapter 2).

The two spatial demonstratives, *-ni* ‘this’ and *-na* ‘that,’ shown in (13), correspond roughly to the first and second persons. That is, they can be read as meaning ‘near me’ and ‘near you,’ respectively.¹⁸ I differentiate them from the anaphoric demonstrative by labeling their structural position Dem_{sp} and glossing them DEM_{sp} . Where necessary, I differentiate them from one another by glossing them $\text{DEM}_{\text{sp}}.1$ (first-person spatial demonstrative) and $\text{DEM}_{\text{sp}}.2$ (second-person spatial demonstrative).

- (13) *mei he falé -ni ki he falé -na*
 from SPEC house $\text{DEM}_{\text{sp}}.1$ to SPEC house $\text{DEM}_{\text{sp}}.2$
 ‘from this house (where I am) to that house (where you are)’
 (adapted from Churchward 1953:152)

1.2.2. Post-nominal adjectives

Most adjectives in Tongan only occur post-nominally. They often immediately follow N^0 . When an adjective co-occurs with a spatial demonstrative clitic, it is unclear whether the demonstrative or the adjective should precede. The data below seem to suggest that their relative order may be determined prosodically, with phonologically light adjectives preceding the demonstrative clitic and phonologically heavy elements following. Further discussion of the relative ordering of spatial demonstrative clitics and postnominal adjectives will be addressed in Chapter 2.

- (14) *ha me’a lahi*
 NONSPEC thing **big**
 ‘a big thing’
 (adapted from Churchward 1953:190)

¹⁸According to my consultant, LMK, the use of *-ni* ‘this, near me’ and *-na* ‘that, near you’ is normally felicitous only when the referent is present and visible.

- (15) *he ta'ahine Tonga faka'ofa'ofa mo angamalū*
 SPEC girl Tonga **beautiful and gentle**
 'a beautiful and gentle Tongan girl'
 (Hendrick 2005:10)
- (16) a. *To'o mai 'a e fanga ki'i pepa-na lanu pulu 'e nima.*
 bring to-me ABS SPEC ASP small **paper-na colour blue** SUBJV five
 "Bring me those five blue booklets."
 b. **... 'a e fanga ki'i pepa lanu pulu-na 'e nima*
 (FN:LMK 2013)
- (17) a. *Koe tokitā 'oku tokoni ki he fanga ki'i tamaiki-na faka'ofa'ofa*
 PRED doctor PRES help DAT SPEC ASP small **boy-na beautiful**
 "It's the doctor who is helping those cute little boys."
 b. *?*...ki he fanga ki'i tamaiki faka'ofa'ofa-na*
 (FN:LMK 2013)

As will be discussed in Chapter 4, post-nominal *lahi* 'big' and *si'i* 'small' interact with pre-nominal *ngaahi* (plural marker) and pluralizing nominal aspect markers to generate the readings *many* and *few*, respectively. When they have this function, they are in complementary distribution with numerals, and I refer to them as *quantifying adjectives*. In such cases, I propose that, like numerals, they are right-adjoined to outer AspP (see section 1.2.4 and Chapter 4 for discussion). When they function as ordinary adjectives, modifying the noun directly, I assume that they are right-adjoined to N⁰. A fuller discussion of Tongan adjectives is set aside for future research.

1.2.3. Genitive DP Possessors

To the right of Adj⁰ is *nP*, one of the two places where a genitive possessor can occur within a noun phrase, the other – as we have seen – being D⁰. Pronominal possessors may occur in

either position, or both; non-pronominal ones can only occur here, preceded by a possessive case marker *'a* (subjective) or *'o* (objective). I propose that the D⁰ possessive pronouns are generated by movement of a clitic particle from [Spec, *nP*] to D⁰; this analysis is presented in Chapter 3. In (18a), below, possessors are present within the nominal expression both pre-nominally, in D⁰, and post-nominally, in *nP*. In (18b), repeated from (6), only a pre-nuclear possessor is present. In (19), the possessor is non-pronominal, and thus it is present only in the post-nominal *nP* position.

- (18) a. *hono* *sote* *'ona*¹⁹
 SPEC-GEN_{OBJ}-3.SG shirt GEN_{OBJ}-3.SG
 'His shirt'
- b. *hono* *sote*
 SPEC-GEN_{OBJ}-3.SG shirt
 'His shirt'

(adapted from Churchward 1953:142)

- (19) *e* *fanga pulú* *'a* *Sione*
 SPEC ASP COW GEN_{SBJ} *Sione*
 'Sione's cows'

(Shumway 1971:344)

1.2.4. Numerals

Following GenP is CP_{NUME}, the position in which cardinal numerals appear, as in (20). They are always preceded by the particle *'e*. A detailed discussion of numeral clauses is presented in Chapter 4, where I argue for treating the particle *'e* in these constructions as a complementizer and its complement as a type of highly reduced infinitival clause. In that chapter, I also discuss the interaction of numerals with nominal aspect markers.

¹⁹Or *o'ona*. There are two series of post-nuclear possessive pronouns, one of which contains a reduplicant of the case-marker. This alternation seems to be associated with a subtle difference in meaning, but the nature of the distinction is unclear (Churchward 1953; Shumway 1971). I return to this in Chapter 3.

- (20) *ha tēpile 'e nima*
 NONSPEC table 'e five
 'three tables'

(FN:LMK 2009)

1.2.5. Anaphoric demonstrative – the definite accent

The third demonstrative clitic, as mentioned above, is the definite accent (DA), which I propose is an a marker of discourse-anaphoric deixis. I label its structural position as Dem_{ANA} and gloss it as DA. It is expressed phonologically as an apparent stress shift at the right edge of a DP, and it functions as a marker of definiteness (recall that definiteness is not part of the Tongan determiner system), represented orthographically as an acute accent <^> (21, 22). Underlyingly, as analyzed in Clark (1974) and supported by phonetic examination in Anderson and Otsuka (2006), it is a null mora which extends the final vowel in DP. Since primary stress in Tongan is placed on the penultimate mora of each word, the most salient indication of DA is a stress on the DP-final vowel where it would otherwise occur on the penult.

- (21) *'Oku kumi 'a Sioasi ki he fefine potó*
 PRES seek ABS Sioasi DAT SPEC woman clever-DA
 'Sioasi is looking for **the** clever woman'

(Hendrick 2005:914)

- (22) a. *Na'a ke 'alu ki he fakatahá?*
 PAST 2.SG go DAT SPEC meeting-DA
 'Did you go to **the** meeting?'
- b. *Na'a ke 'alu ki he fakataha lahi?*
 PAST 2.SG go DAT SPEC meeting big-DA
 'Did you go to **the big** meeting?'

- c. *Na'a ke 'alu ki he fakatahá 'aneafi?*
 PAST 2.SG go DAT SPEC **meeting-DA** yesterday
 'Did you go to **the meeting** yesterday?'
- d. *Na'a ke 'alu ki he fakataha na'e fai 'aneafi?*
 PAST 2.SG go DAT SPEC **meeting past do** yesterday-DA
 Did you go to **the meeting that took place** yesterday?
 (adapted from Churchward 1953:9)

The treatment of DA as the reflex of a third-person demonstrative clitic was first proposed by Clark (1974) and has since been generally accepted. While this analysis sounds abstract at first blush, it becomes intuitive when one looks at the uncontroversial parts of the Tongan demonstrative paradigm as laid out by Churchward (1953) and given here in TABLE 1.

TABLE 1: TONGAN DEMONSTRATIVE PARADIGM (CLARK 1974)

	Clitic	Pronoun (general)	Pronoun (dative PP)	Modifier
1 st person	<i>ni</i>	<i>eni</i>	<i>heni</i>	<i>peheni</i>
2 nd person	<i>na</i>	<i>ena</i>	<i>hena</i>	<i>pehena</i>
3 rd person/neutral		<i>ee</i> ²⁰	<i>hee</i>	<i>pehee</i>

As mentioned above, *-ni* and *-na* mean 'near me' and 'near you' respectively. They correspond to the pronouns *eni* and *ena* ('the one near me' and 'the one near you') and their allomorphs *heni* and *hena* (used after dative prepositions), as well as the modifiers *peheni* and *pehena* ('like this' (first person); 'like that' (second person)) (Churchward 1953:150-153). The third-person counterparts of these pronouns and modifiers – *ē*, *hē*, and *pehē* – refer "simply to what I (the speaker) am pointing to, whether actually or only in imagination, no

²⁰Clark renders the long vowels in these forms as digraphs, *i.e.* <ee>. In other texts, *e.g.* Churchward (1953, 1959), they are rendered with a macron, *i.e.* <ē>.

matter whether it be near me or near you or somewhere else” (Churchward 1953:151) – in other words, they are the ϕ -featureless members of a person-based demonstrative paradigm (cf. Cowper and Hall’s (2005a) arguments that third-person pronouns lack ϕ -features), and what they express is general spatial or discourse deixis²¹ – *i.e.* definiteness. This is the semantic basis of Clark’s (1974) argumentation that DA corresponds to the empty space in the paradigm; he further supports this with phonological and historical linguistic analysis which I will not elaborate here. He concludes that as it underwent phonological reduction, the third-person demonstrative clitic also underwent semantic changes, and its demonstrative sense “was attenuated to the point where it became simply a marker of definiteness” (Clark 1974:107). I propose, specifically, that the nature of this semantic bleaching was the loss of its π node, from which it derived its locative meaning, rendering it purely anaphoric.

Whereas in languages like English, [DEFINITE] is a feature residing in D^0 and dependent on [SPECIFIC] (Cowper & Hall 2005), in Tongan it is the byproduct of anaphoric deixis, which in turn is the default interpretation of a demonstrative clitic lacking π . Despite this structural dissociation between definiteness and specificity, the cross-linguistically observed relationship between them holds in Tongan: $\text{Dem}_{\text{ANA}}^0$, which encodes definiteness by interpretation, selects a determiner with the feature [SPECIFIC]. Thus, a universal dependency is observed, but by a different mechanism.

1.2.6. The universal quantifiers

The rightmost position in a Tongan nominal expression is Q^0 , the locus of the universal quantifiers *kātoa* and *kotoa* (*pē*) shown in (23) through (25). These are probably the only Q^0 quantifiers in Tongan; other elements with quantificational functions are nominal aspect markers, numerals, number markers, adjectives, and adverbs. *Kotoa* (*pē*) can mean ‘all’ or ‘whole;’ its interpretation depends on the presence or absence of number markers as well as

²¹ Senft (2004:2) refers to this as anaphoric deixis. I return to the notion of anaphoric deixis and its relationship to definiteness in Tongan in Chapter 2.

the definiteness of the DP under it. The emphatic particle *pē* is optional but very frequently occurs with *kotoa*, as a marker of emphasis (Churchward 1953:277).

- (23) a. *'a e fanga manu kotoa pē*
 ABS SPEC ASP animal **all** EMPH
 'all animals'
- b. *'a e fanga manú kotoa pē*
 ABS SPEC ASP animal-DA **all** EMPH
 'all the animals' (of a particular lot)

(adapted from Churchward 1953:277)

- (24) a. *'i he fonua kotoa pē*
 DAT SPEC country **all** EMPH
 'in all countries'
- b. *'i he fonuá kotoa pē*
 DAT DET country-DA **all** EMPH
 'In the whole country.'

(adapted from Churchward 1953:277)

- (25) *'a e langí kátoa*
 ABS SPEC sky **all**
 'The whole sky.'

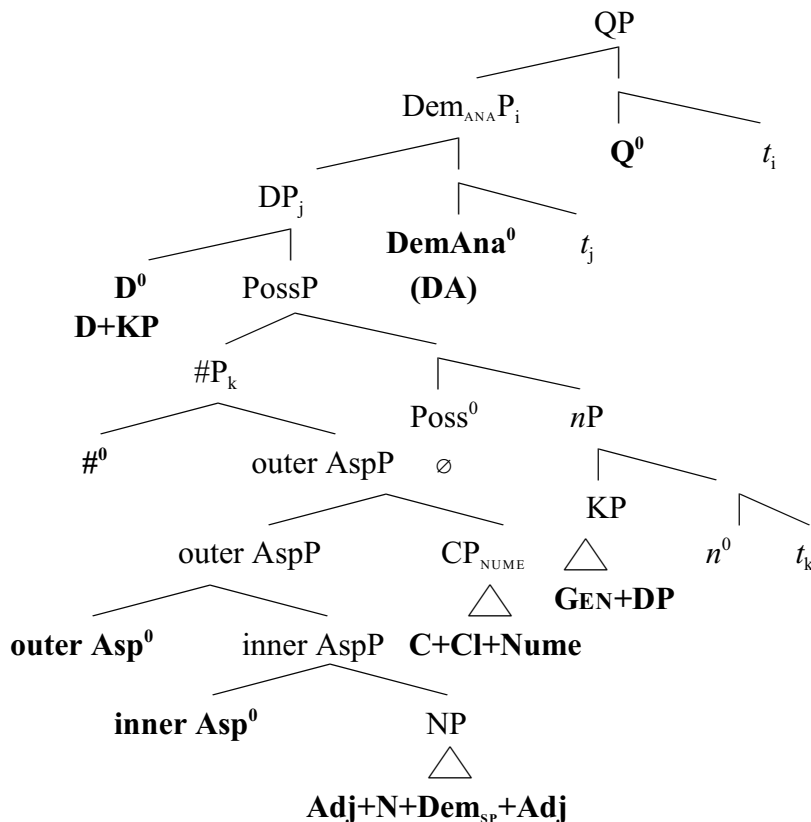
(adapted from Churchward 1953:278)

1.3. Proposed structure of Tongan Nominal Expressions

The structure I propose for saturated nominal phrases in Tongan (maximally QP) is shown in Figure 2. Note that this is given as a template only. Examples of very heavy nominal expressions are uncommon in the literature, and my consultant is hesitant to accept them, sometimes indicating assent when I utter them, but always leaving elements out or paraphrasing in such a manner that one or more elements are moved into relative clauses or

clefts. Furthermore, Tongan allows considerable variation in the order of elements both within nominal expressions and at the clause level. In Chapter 4, I introduce some of the variation available among post-nominal elements within nominal expressions, and I suggest possible explanations for some of these.

FIGURE 2: STRUCTURE OF TONGAN NOMINAL EXPRESSIONS



The structure in Figure 2 includes two “roll-up” movements, in which an element moves from the complement of a head to the specifier of its projection, causing elements in an underlyingly local relation to appear in opposite peripheries. $Dem_{ANA}P_i$ moves from [Comp, Q^0] to [Spec, QP] and DP_j moves from [Comp, Dem_{ANA}^0] to [Spec, DemP]. The motivation for the two Comp-to-Spec movements is not clearly understood, but they are justified by the underlying relations between elements (which suggest they are adjacent when merged) and their linear separation (indicating that this underlying adjacency is obscured by later movement). Similar movements have been proposed in other Austronesian languages such

as Niuean (Kahnemuyipour & Massam 2006) and Malagasy (Rackowski & Travis 2000), and in DPs cross-linguistically (Kayne 1994, Munaro & Poletto 2003, Aboh 2004, McCloskey 2004, Svenonius 2008).

Another relation whose locality is obscured by movement is that between the post-nominal possessor (KP) and D^0 . That such a relation exists is seen in the ability of a pronominal possessor to be realized in both of these positions – essentially as a clitic in D^0 doubled by a strong possessive pronoun in the post-nominal position. The derivation can be summarized as follows: The possessum (here, $\#P_k$) is merged as the internal argument of the null functional head n^0 , where it establishes a relation with the possessor (KP), the external argument of nP . At this point, the relation between KP and D^0 is sufficiently local that KP can be copied to D^0 , generating a possessive clitic pronoun.²² Following this, $\#P$ moves to [Spec, PossP]. Since $\#P$ is a potentially heavy projection containing NP, this creates the appearance of a long-distance relation between D^0 and KP.

The final apparent long-distance relation is that between the numeral clause, in the right periphery, and the aspect marker, in the left periphery. This relation allows the numeral to modify the aspect marker (evidence that it does so comes from the so-called “special numeral constructions,” discussed in Chapter 4); the long linear distance between these elements is due to the potential heaviness of AspP. As noted above, I assume right adjunction.

Several elements of Tongan nominal expressions are left deliberately vague in the above tree. Some of these are elaborated upon in the subsequent chapters; others are set aside for future research. As mentioned above, the ordinary post-nominal position of adjectives is not discussed in detail in this dissertation. Likewise, I set the problem of pre-nominal adjectives aside for future research; it is unclear to me at this point whether they are inner Aspect markers, specifiers of NP, head-adjoined to N^0 , or perhaps scrambled into their spell-out

²²In moving from KP (in Spec, nP) to D^0 , K^0 crosses another left-peripheral functional projection, PossP; thus, the relation between the pre- and post-nuclear possessor positions is not strictly local (Otsuka, p.c.); however, as this movement occurs within the left periphery, I assume that it is sufficiently local for an Agree relation to be established (following Uriagereka 1995 and Roberts 2010).

position. The internal structure of possessive phrases and the generation of possessive clitics in D^0 is treated in detail in Chapter 3. Likewise, my proposal for the internal structure of numeral clauses, simplified in Figure 2, is presented in detail in Chapter 4.

1.4. Roadmap to the Dissertation

The remainder of the dissertation proceeds as follows:

Chapter 2 discusses the determiners and demonstratives of Tongan. As noted above, these elements surface at opposite ends of the Tongan nominal expression, with determiners on the far left and demonstratives on the far right. After a descriptive account of the determiners and demonstratives of the language in section 2.1, I address the nature of definiteness and specificity, as well as the relationship between them cross-linguistically (section 2.2) and particularly in Tongan (section 2.3). In section 2.4, I introduce and address the diminutive determiners. In section 2.5, I discuss at length the morphology and syntax of determiners and demonstratives in Tongan nominal expressions and the locus of definiteness in Tongan nominal expressions. In section 2.6, I present the universal quantifiers *kātoa* and *kotoa* and the roll-up movement by which they end up at the far right edge of the nominal expression.

In Chapter 3, I turn my attention to morphologically and syntactically complex pronouns and genitive structures in Tongan. I begin with a taxonomy of pro-forms in the language (section 3.1), decomposing them into six different grammatical categories and examining their internal structures. I propose the internal syntactic structure of each. This is followed by a discussion of the feature geometry by which the paradigm of possessive pronouns is derived: In section 3.2, I discuss the two types of possession in the language, and in section 3.3, I address the geometry of ϕ -features. Section 3.4 examines the morphosyntax of possession within Tongan nominal expressions, focusing on the derivation of post-nuclear possessors (lexical and pronominal) via predicate-fronting of the possessum as well as that of pre-nuclear possessive clitic pronouns via movement of a sub-lexical element from n to D^0 . This

predicate-fronting parallels the clause-level fronting of VPs to [Spec, IP] or [Spec, TP] proposed for Niuean by Massam and Smallwood (1997), Massam (2001a,b), and Kahnemuyipour and Massam (2006), as adopted for Tongan clause structure in Macdonald (2003; 2005a,b; 2006). In section 3.5, I show how the derivation of possessive clitic pronouns in Tongan nominal expressions partially parallels that of possessive subject-like pronouns at the clause level in the language. In 3.6, I introduce another possessive-like construction in Tongan; I propose that this is not, in fact, a true genitive construction but a means by which nominal aspect markers are derived from other nouns.

In Chapter 4, I elaborate on nominal aspect, numerals, and the relations that hold between them and number. In section 4.1, I introduce the Tongan number and nominal aspect markers. I then explore at some length the feature geometry and morphosyntax of *Seinsart* and nominal aspect and how aspect relates to number (4.2). In 4.3, I examine the internal structure of numeral constructions in Tongan, showing that numerals in the language are predicates and numeral constructions are highly reduced clauses. In section 4.4., I examine the so-called “Special numeral constructions” of Tongan and find evidence therein for a close relation between numerals and nominal aspect in the language; based on this, I present my proposal for the external syntax of modifying numerals.

I end the dissertation with a brief concluding chapter (Chapter 5). I begin with some lingering questions that are raised and left unanswered by this dissertation, as well as some potential avenues for future research that arise from it (5.1). I follow this with a review of several themes that are woven throughout this dissertation: quantification, classification, and superficially long-distance relations that are underlyingly local (5.2). In 5.3, I conclude the dissertation with a brief description of its significance.

1.4.1. A note on the data

As a non-speaker of Tongan, and thus lacking in linguistic intuitions, I rely on the judgements of my own consultants as well as the judgements of other linguists and grammarians and their consultants. Many of the data cited in this dissertation come from Churchward's (1953) *Tongan Grammar*; these are supplemented by data gathered in my own fieldwork (FN) and from other linguistic literature. The choice of Churchward (1953) as a major source of data reflects the fact that his grammar is descriptively robust, often paradigmatically complete, and thematically organized. For the most part, I have found that his data are consistent with those found in the corpora of Shumway (1971) and Tchekhoff (1981), as well as with my consultant's judgements and the descriptions found in other linguistic literature, including Chung (1977), Dukes (1996), Otsuka (2000), and Ball (2005a, 2008). As is the case with any language, differences in judgements of grammaticality and meaning, particularly in subtle cases, differ amongst speakers, especially where these speakers are separated by geographical and temporal distance. Where differences exist amongst my sources, I point this out, and I try to account for this variation within my analyses.

Most of my fieldwork was conducted with a single consultant, referred to as LMK. She is a Tongan woman in her late 60s who has lived in Toronto since 1971 but who maintains regular contact with friends and family in Tonga and makes frequent (approximately biennial), month-long trips to that country. I met with LMK approximately a dozen times between 2009 and 2013. I worked with another consultant, a younger Tongan man who also resides in Toronto and whom I refer to as SVM, in 2005 and 2006 for earlier research (Macdonald 2005a,b; 2006; to appear). Data from SVM is cited in Chapter 3.

Chapter 2

Determiners, Demonstratives, and Universal Quantifiers

This chapter explores the internal and external syntax of the articles, demonstratives, and universal quantifiers of Tongan. I analyze the articles as determiners instantiating D^0 and the universal quantifiers as true quantifiers in Q^0 (as will be seen through the rest of the paper, there are many other loci of quantification in Tongan, and the universal quantifiers appear to be the only ones which instantiate Q^0). The Tongan demonstratives are more complex: The definite accent (DA) is shown to be derived from the same paradigm as the other demonstrative clitics; however, it has undergone semantic and syntactic reanalysis and is now a marker of purely anaphoric deixis. Unlike the other demonstratives, which are NP-internal modifiers, it heads a left-peripheral position. I label this position as Dem_{ANA}^0 (anaphoric demonstrative) and that of the other demonstrative clitics as Dem_{sp}^0 (spatial demonstrative).

The primary foci of this chapter are the relations amongst the determiners and the definite accent, the function of determiners in Tongan, the nature of definiteness and its relationship to specificity, and the relation between determiners and the definite accent. Specifically, I argue that the articles in Tongan are not the locus of definiteness but, rather, mark contrasts of specificity and (potential) referentiality. While D^0 is often thought of as being, by definition, the locus of definiteness (see, *e.g.* Lyons 1999), I argue for it as the position of the Tongan articles because of their capacity to convert predicates to arguments. Definiteness in Tongan, I propose, is not associated with D^0 but with a higher left-peripheral head, the aforementioned Dem_{ANA}^0 , which selects a DP complement. The adjacency of the merge positions of D^0 and Dem_{ANA}^0 allows this selection relation, which in turn preserves the cross-linguistic association of definiteness with specificity. However, this relation is obscured by a roll-up movement of DP from its merge position as the complement of Dem_{ANA}^0 to the specifier of $Dem_{ANA}P$. This movement strands the definite accent at the right edge of the nominal expression.

This leftward Comp-to-Spec (or roll-up) movement is not unique to Tongan. It has been observed in other Austronesian languages, such as Niuean (Kahnemuyipour & Massam 2006) and Malagasy (Rackowski & Travis 2000); in Irish, another VP-initial language whose demonstrative syntax resembles that of Tongan (McCloskey 2004); and in DPs cross-linguistically (Kayne 1994, Munaro & Poletto 2003, Aboh 2004, Svenonius 2008).²³

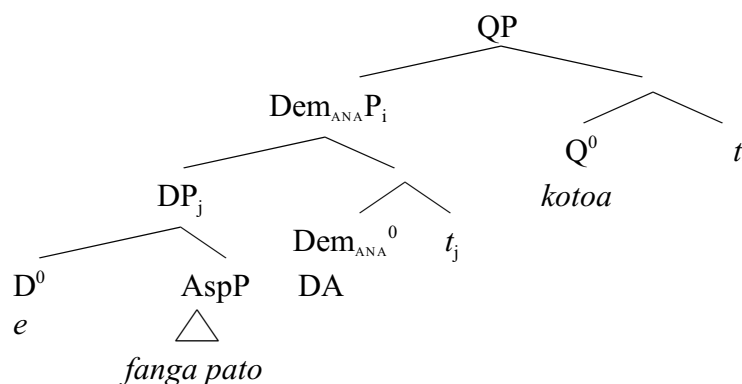
Figure 3 represents the basic structure I propose for Tongan QPs. The anaphoric demonstrative phrase *he fanga pató* ‘the ducks’ is merged as the complement of *katoa* ‘all’ and moves into its specifier. Likewise, the DP *he fanga pato* [SPECIFIC] ‘ducks’ is merged as the complement of the definite accent and moved into its specifier (recall that the definite accent is realized orthographically as an acute accent, phonologically as a null mora extending the length of the DP-final vowel, and phonetically as a stress shift).

²³It should be noted that Comp-to-Spec movement, as implemented here, is not compatible with a strict interpretation of Anti-locality (e.g. Grohmann 2000, 2003; Abels 2003), which states that movement in syntax must occur across a minimum distance (unless both copies of a locally moved XP are pronounced, and each has a different PF). Anti-locality rules out movement of a complement to a specifier position within the same XP (Grohmann 2003:14). One solution to this tension might be to add additional F⁰s (i.e. between the selecting head of a moved XP and the specifier position in which it lands) while adopting a narrow interpretation of Anti-locality (i.e. banning movement only within an XP and not within what Grohmann (2000, 2003) calls a “Prolific Domain”). However, I do not find theory-external motivation for such heads within Tongan nominal expressions, and I do not employ them here. Arguments have been made by proponents of both Anti-locality (e.g. Abels 2010) and of roll-up movements (e.g. Ndayriagije 2010) as well as by others (e.g. Aboh 2010) that the two theories are incompatible. Abels (2010) specifically argues against the introduction of null F⁰s which, in his words, make “a toothless tiger” of Anti-locality (2010:1), arguing that functional heads are not motivated by the LCA of Kayne (1994) nor by word order, and should be dispensed with. In this dissertation, I employ roll-up movement in the absence of intervening F⁰s, and I do not assume Anti-locality as a constraint. However, arguments either for or against Anti-locality or the existence of intervening null F⁰s between the merge and surface positions of moved constituents are outside the scope of this dissertation. I would direct the curious reader to papers presented at the Conference on Generative Initiatives in Syntactic Theory (GIST 1) at Ghent University, March 2010, for theoretical approaches to resolving the tension between roll-up and Anti-locality.

FIGURE 3: STRUCTURE OF THE TONGAN QUANTIFIER PHRASE

*he*²⁴ *fanga pató* *kotoa*
 SPEC ASP duck-DA all
 “all the ducks”

(Chung 1978:191)



I begin this chapter with a catalogue of the basic (non-genitive) determiners of Tongan, which mark the specificity/non-specificity and diminutivity/non-diminutivity of DPs and a description of the definite accent, a separate element which encodes definiteness (section 2.1). Following this and a discussion of what is meant by the terms *definiteness* and *specificity* (section 2.2) and how these play out in Tongan (section 2.3), as well as the derivation of diminutive determiners in the language (section 2.4), I present my proposal for the morphology and syntax of the various structures associated with definiteness and specificity in the language (section 2.5). This section elaborates on the long-distance relation between D^0 , which is the locus of specificity, and Dem^0 , which is the locus of definiteness. I follow this with a brief discussion of the Tongan universal quantifiers *kotoa* and *kātoa* (2.6), and I conclude the chapter with a brief summary and some lingering questions in section 2.7.

²⁴The full context of this phrase is *'Oku vākē 'ae fanga pató kotoa* ('all the ducks were making noise'), wherein the presence of the absolutive case marker triggers allomorphy in the determiner, rendering it *e*. As I have isolated the nominal phrase from the case-marker here, I have reverted to the underlying form.

2.1. Basic Tongan Determiners and the Definite Accent

Tongan has four basic determiners and a large paradigm of genitive determiners. The genitive determiners are catalogued in section 2.4, where I discuss their derivation. The four basic determiners are *he*²⁵ (specific), *si'i* (specific diminutive), *ha* (non-specific), and *si'a* (non-specific diminutive). These are presented in Table 2, below. Note that number or nominal classification in the sense of Borer (2005; see Chapter 4 for discussion) is not encoded in these determiners. Unlike English *a*, none of these determiners marks a nominal as singular, nor as countable, and each of them may co-occur with dual and plural number markers as well as with what I call nominal aspect markers (Chapter 4).

TABLE 2: PARADIGM OF BASIC TONGAN DETERMINERS

	Ordinary	Diminutive
Non-specific	<i>ha</i>	<i>si'a</i>
Specific	<i>he</i>	<i>si'i</i>

In much of the literature on Tongan (Churchward 1953, Tchekhoff 1981, Otsuka 2000, Hendrick 2005), *he* and *si'i* are glossed DEFINITE or ‘the,’ whereas *ha* and *si'a* are glossed INDEFINITE or ‘a.’ As will be discussed below, most of these authors acknowledge that the distinction is not the same as the definite/indefinite distinction in English. Those determiners which I am calling diminutive, *i.e.* *si'i* and *si'a* are referred to as “emotional” by Churchward (1953), and this convention is adopted by Dukes (1996) and Hendrick (2005). Other authors do not address these determiners at all, focusing entirely on the *he/ha* distinction.

I argue below that definiteness is not encoded in the Tongan determiner system. Rather, it is realized through the definite accent, an apparent stress shift which occurs at the right edge of

²⁵There are two allomorphs of this article. *He* occurs after the case markers/prepositions ‘*e* (ERGATIVE), ‘*i* (DATIVE), *ki* (DATIVE), and *mei* (‘from’); *e* is used elsewhere.

a nominal expression. In Tongan orthography, this is written as an acute accent over the final vowel, as seen in *pató* ‘duck,’ in Figure 3, above.²⁶

As discussed in section 2.5, this apparent stress shift is better analyzed following Clark (1974) and Anderson and Otsuka (2006) as a demonstrative clitic whose form is a null mora, triggering a stress shift. The consequence of this analysis is that definiteness is associated not with determiners in Tongan but, rather, with demonstratives. I propose that the locus of the definite accent in Tongan is $\text{Dem}_{\text{ANA}}^0$, which – despite appearing at the right edge of the nominal phrase – is merged as the sister of DP. Thus, there is an underlying adjacency between the anaphoric demonstrative (which encodes definiteness) and the specific article, despite the apparent distance between them at spellout.

This relationship between determiners and demonstratives is observed cross-linguistically (Lyons 1999, Rijkhoff 2002, Cowper & Hall 2002; discussion follows in section 2.5.). Although in Tongan these elements surface at opposite ends of the DP, I will show that the cross-linguistically observed dependency of definiteness on specificity (Cowper & Hall 2002) is not contradicted in Tongan but is preserved by the underlying adjacency of D^0 and $\text{Dem}_{\text{ANA}}^0$, as $\text{Dem}_{\text{ANA}}^0$ selects a D^0 with the feature [SPECIFIC]. The apparent long-distance relation between them is derived by a roll-up movement of the type seen elsewhere in Austronesian languages (*e.g.* Rackowski & Travis 2000, Kahnemuyipour & Massam, 2006) and proposed by Svenonius (2008) as an important source of cross-linguistic variation in word orders within DP.

²⁶Although the definite accent commonly occurs in print, my consultant LMK says it is not normally written. Otsuka (p.c.), however, advises that it is taught in Tongan schools, so perhaps its omission is a characteristic of casual writing.

2.2. Specificity and Definiteness

2.2.1. What is specificity?

The linguistic literature on specificity defines the term in a number of different ways – in terms of reference, scope, or morphosyntactic feature geometry. Cowper and Hall (2002) combine morphosyntactic and pragmatic approaches, claiming that if a DP has the feature [SPECIFIC] but does not have the feature [DEFINITE], it “typically refers to an individual that is known to the speaker but not to the hearer” (Cowper & Hall 2002:3). Lyons (1999) seeks to unify the pragmatic and semantic approaches: He points out that non-specific indefinites are generally non-referential (the speaker does not have a particular referent in mind) and take narrow scope in opaque contexts, such as (26b); whereas specific indefinites are referential (the speaker has a particular referent in mind) and take wide scope in opaque contexts, as in (26c), which he cites from Ioup (1977) (Lyons 1999:170-174).

- (26) a. *The casting director is looking for a handsome blond.*
- b. wide-scope, referential
The casting director is looking for (c), and (c) is a handsome blond.
- c. narrow-scope, non-referential
The casting director wants (\exists handsome blond x) (she find x).
(Ioup 1977: 240)

There is some debate about the relation between scope-taking qualities and referentiality: Lyons (1999) notes that referentiality is a pragmatic matter, whereas scope is a semantic one (*i.e.* the existential operator may take wide or narrow scope relative to an opacity-creating element). Ioup (1977) argues for the possibility of non-referential, wide-scope indefinites; in examples such as (26) above, she suggests a third possible interpretation, formalized below in (27), in which there is some ideal handsome blond for which the casting director is looking.

- (27) *The casting director is looking for a handsome blond.*
 wide-scope, non-referential
 $(\exists \text{ handsome blond } x)$ (The casting director is looking for x).

(Ioup 1977:240)

Despite these complications, Lyons (1999) notes that the two types of specificity are roughly in complementary distribution: Scope determines specificity in opaque contexts, and referentiality determines specificity in transparent ones. He identifies three types of languages in terms of their morphosyntactic treatment of specificity (p.176). The first category consists of languages (like English) which do not encode specificity distinctions at all, allowing for ambiguities in both the scope and the referentiality of indefinites. The second consists of languages which encode specificity only in opaque contexts; in these languages, he notes, it seems always to be the narrow-scope/non-specific indefinite which is marked, while the wide-scope/specific indefinite is unmarked; in these languages, referentiality distinctions are unmarked. Finally, there are languages in which specificity distinctions are encoded, but no grammatical distinction is made between scope and referentiality; both types of specificity (or non-specificity) are marked identically.

As will be shown below, Tongan fits roughly into the third category. The distribution of *he* has a complex pattern which is sometimes best understood in terms of wide scope and sometimes in terms of referentiality.

2.2.2. What is Definiteness?

As with specificity, there are a number of different approaches to and definitions of definiteness. Hawkins (1978) and Lyons (1999) both note two main branches of thought: one which argues that the core meaning of definiteness is inclusiveness,²⁷ and one which argues

²⁷The term *inclusiveness* with regard to definiteness comes from Hawkins (1978). Citing Russell's (1905) definition of the definite article as an assertion of uniqueness, in the form of the propositions *There is only one X* and *There is not more than one X*, where X is the referent of the nominal in question, Hawkins

that it is familiarity. Both authors seek to unify these two definitions; Hawkins (1978) proposes an analysis based in the theory of speech acts, and Lyons (1999) offers a syntactic definition.

Hawkins (1978:167) proposes that in using the definite article the speaker “introduces an article,” “instructs the hearer to locate the referent in some shared set of objects,” and “refers to the totality of the objects or mass within this set which satisfy the referring expression.” Context, he argues, is what accounts for those situations in which definites can be used for first reference (for example, if we are in a car, or if we have been speaking about a car, *the steering wheel* would be more felicitous than *a steering wheel*, even as a first reference, so long as I am referring to the steering wheel of that car). Hawkins (1978) has difficulty, however, accounting for examples such as (28). He simply notes that in such examples, the definite nominal must be linked to something in shared context (here, *Bill*), which provides instructions to help the hearer locate the referent.

(28) Q: *What’s wrong with Bill?*

A: *Oh, the woman he went out with last night was nasty to him.*

(Hawkins 1978:101)

Similarly, Cowper and Hall (2002:4) define definiteness as signifying that an NP is “referentially indexed in the Universe of Discourse,” whether previously mentioned (29a) readily inferred (29b), or known to be unique (29c). The first and second of these correspond to Lyons’ (1999) concept of identifiability, and the third to his concept of inclusiveness, respectively.

(29) a. *A panda, a bishop, and a rabbi walk into a bar. **The panda** orders a beer.*

b. *Elizabeth has a guitar. **The strings** are nylon.*

(1978:96) points out that *uniqueness* is only an apt term when the nominal is headed by a singular count noun, and he proposes *inclusiveness* as an alternative (p. 157).

c. *The mayor is a buffoon.*

(Cowper & Hall 2002:4)

Lyons (1999) argues that the search for a formal semantic definition which would unify inclusiveness and identifiability is bound to be fruitless and proposes that definiteness should instead be defined syntactically. He offers several examples in which only inclusiveness seems to be relevant (e.g. (30a)), and several others in which only identifiability does (e.g. (30b)). Furthermore, he notes that some languages combine definiteness in one of these senses with specificity, using the same morpheme to mark both (he includes Samoan, whose determiner system is similar to that of Tongan, in this category).

(30) a. *The winner of this competition will get a week in the Bahamas for two.*

b. [In a room with three doors, one of which is open]
Close *the door*, please.

(Lyons 1999:9, 14)

He concludes that definiteness is a grammatical category, like tense, mood, or number. Noting that “grammatical categories are not direct expressions of the semantic/pragmatic concepts which they can be said to be the grammaticalizations of” (1999:276), Lyons claims that (syntactic) definiteness is the grammaticalization of “semantic/pragmatic definiteness” (1999:278), which is prototypically identifiability, since demonstratives – which can be defined in terms of identifiability but not inclusiveness – invariably show definiteness effects. However, he says that once identifiability has become grammaticalized as definiteness, the category generalizes to other uses, such as inclusiveness or even specificity.

The definiteness effects observed with demonstratives is not coincidental. Lyons (1999: 107) notes that demonstratives are inherently definite. Furthermore, there he links definiteness to deixis, stating (p.160) that the definite article is “essentially deictic” in that it “directs a hearer’s attention toward a referent,” and yet that it is at the same time “deictically neutral

(expressing no distinction of the proximal-distal kind).” I will return to this in sections 2.3 and 2.5, below, where I discuss the meaning and expression of definiteness in Tongan.

Gillon (2006) aims for a formal-semantic definition of definiteness in terms of domain restriction (following Chung and Ladusaw 1997). She argues that, cross-linguistically, definiteness is equivalent to the restriction of the domain of NP, whether via Choice Function, Restrict, or some other means. In her analysis, English *a*, even in its specific sense, does not restrict the domain of the following NP. As will be discussed below, Hendrick (2005) uses a similar definition for definiteness in Tongan. This results in a class of definites which includes both what I treat as definites (nominals marked by DA) and what I treat as specific indefinites (nominals introduced by *he* or one of its derivatives, without DA).

Kyriakaki (2011) argues that definiteness is the intersection of familiarity and uniqueness. Fully specified definites, which include English DPs headed by *the*, denote individuals that are both familiar to the listener and uniquely identifiable, *i.e.* a singleton set of one familiar object. Underspecified definites, which she argues include Greek DPs headed by a definite article, as well as English proper names, introduce familiarity but not uniqueness. Where the set of familiar entities is a singleton, no further restriction is necessary to yield a definite interpretation. However, where the set of familiar entities is a non-singleton set, further modification (*e.g.* a restrictive relative clause or a definite description) must be introduced to narrow the set to one.

Given the scope of this paper, which is an examination of syntactic relations in the Tongan DP, and given the difficulty of defining definiteness in formal semantic or pragmatic terms, I will set aside the problem of developing a formal definition of definiteness. Instead, I will adopt an informal, working definition based on those of Hawkins (1978) and Cowper and Hall (2002): A DP is definite if it is referentially indexed to something which is already present in the discourse context or to the entire set of things which correspond to a particular description (the nominal predicate of the determiner). The first part of this definition includes both discourse anaphora and shared real-world knowledge; the second includes definite

descriptions and superlatives which result in the introduction of a new discourse referent. This definition seems to work for English and – as will be seen below – for Tongan. I make no claims regarding other languages.²⁸

2.2.3. Definiteness, Determiners, and D⁰

For Lyons, definite articles – whether null or overt – are strictly associated with D⁰. He eschews the notion of the DP as “determiner phrase,” preferring to treat it as a “definiteness phrase,” and claiming that languages which do not express definiteness do not have DPs. Other determiner-like elements, such as cardinal numerals, indefinite articles, and so on, he proposes occupy other positions within the nominal phrase.

Similarly, Gillon (2006) claims that D⁰ is strictly associated with definite determiners (“D-determiners”), although she opts for a different interpretation of definiteness. Like Lyons (1999), she treats indefinite articles such as English *a* – which she says does not express domain restriction – as occupying a different (lower) position. Within her framework, this would require both *he* and *ha* to restrict the domain of a following NP, making *ha* more definite than English *a*; however, *ha* seems to be more indefinite than *a*, occurring in irrealis contexts where English would require negative-polarity *any*, and generally being dispreferred for introducing new arguments into discourse (see section 2.3 for discussion). Lyons’ (1999) framework would be even more difficult to adopt for Tongan, since definiteness is encoded in the language, but not through either *he* or *ha*; both would have to be treated as not residing in D⁰, which in turn would mean something smaller than DP would suffice as an argument –

²⁸For instance, Gillon (2006) argues that, cross-linguistically, definiteness does not always imply uniqueness/inclusiveness as it does in languages such as English. She demonstrates that the Skwxú7mesh determiner *kwi* is definite in terms of domain restriction but is associated with uniqueness/inclusiveness only via defeasible implicature.

even in a language that has DPs.²⁹ Tongan, therefore, seems to provide evidence that definiteness is not strictly associated with D⁰.

Any treatment of definiteness which involves a strict 1:1 correspondence between D⁰ and definiteness, however the latter is defined, is difficult to reconcile with the facts of Tongan; in fact, it is unclear whether there is any single quality that characterizes determiners cross-linguistically. In Niuean, an Austronesian language related to Tongan, Gorrie *et al.* (2010) show that of the three qualities traditionally treated as essential to D⁰, only two are relevant, and these are associated with different heads. The syntactic function of determiners – licensing as potential arguments – is realized by portmanteau “case-article” morphemes that simultaneously instantiate Case⁰ and Art⁰; these encode case and a proper/common distinction. A related semantic characteristic – the potential for referentiality – is associated with a lower head, #⁰; the presence of # in a nominal phrase is sufficient to block pseudo-noun-incorporation (PNI).³⁰ The third function of determiners – providing a locus for definiteness and specificity – is shown not to be particularly relevant in Niuean, as neither definiteness nor specificity is encoded in the language (although those case-articles which mark an NP as proper do indicate uniqueness).³¹ Thus, Niuean supports the existence of an obligatory, top-level functional category essential to argumenthood, but it shows that the features contained in this category can vary across languages (Gorrie *et al.* 2010:362-363).

That *he* and *ha* are located in the same head is supported not only by the fact that they are in complementary distribution, but also by the morphology of pre-nuclear possessive pronouns,

²⁹ Abner and Burnett (2010, cited with the authors’ permission) argue for such a system, proposing that the Tongan articles are not determiners. Rather, *he* is a demonstrative; *ha* is a numeral; *si’i* is a classifier; and *si’a* is a composite of a higher *si* morpheme and the absolutive case marker *’a*.

³⁰ Thus, a number marker is sufficient to impart potential reference to an NP but is not sufficient to license that NP as an argument within TP. Accordingly, potential reference and potential argumenthood are clearly seen to be distinct in Niuean: All potential arguments are potentially referential, but not all potentially referential nominals can be arguments.

³¹ Rather than specificity and/or definiteness, Niuean encodes a distinction between “new/focused” and neutral NPs. A new referent which is discourse salient, or an old referent which is contrastively focused, is marked as new/focused; an old referent which is not contrastively focused, or a new referent which will not be referred back to, is unmarked (Gorrie *et al.* 2010).

which I am treating as D⁰ possessive pronouns (see Chapter 3 for a full discussion). The morphology of these pronouns is quite transparent, and all begin with either *he* or *ha*, depending on the specificity of the possessum NP.

Whether this head is best analyzed as D⁰ is less clear; however, it does fulfill at least one of the roles associated with determiners: It is necessary for argumenthood. An NP without *he* or *ha* cannot saturate a predicate, as is seen in (31). When neither is present, the NP undergoes pseudo-noun-incorporation (PNI), a phenomenon first examined by Massam (2001a,b) in Niuean and subsequently by Ball (2005a,b; 2008) in Tongan. According to Massam (2001a,b), PNI arises when an NP is merged without higher functional projections, *i.e.* without D⁰. An NP so incorporated saturates the predicate semantically but not syntactically and cannot receive absolutive case. Instead of evacuating VP to check case, it remains *in situ* and moves with the verb under predicate-fronting. A verb which would otherwise appear in a transitive construction, in which both ergative and absolutive cases are checked, instead becomes syntactically intransitive. The external argument, instead of receiving ergative case, receives absolutive case.³²

- (31) a. *Na'e tō 'e Sione 'a e manioke*
 PAST plant ERG Sione ABS SPEC cassava
 'Sione planted the cassava.'

³² Ball (2005a,b; 2008) notes a number of ways that nominal incorporation in Tongan is difficult to categorize as either syntactic and phrasal or something more lexical/morphological. On the one hand, incorporates in these constructions appear to be phrasal, as the noun can be accompanied by post-nominal adjectives, non-finite relative clauses, and PPs, much like the incorporated nominal in Niuean PNI (Massam 2001a,b). On the other hand, it cannot be accompanied by relative clauses, universal quantifiers, possessors, or pronominal adjectives. The first two of these are predicted by the analysis of nominal structure in this dissertation; the other two are harder to account for. Ball (2008) proposes that the verb in such a construction undergoes a derivational-morphological process by which it becomes syntactically intransitive but remains semantically transitive. The result is a V-N whose internal nominal has the peculiar ability to be modified by an adjective or a PP. He proposes two possible solutions: Either the modifiers are either themselves incorporated into the incorporated noun (similarly to what is proposed in Otsuka 2005a) or they are modifiers of the compound verb which are allowed to “see” inside the compound verb and scope over only the nominal portion. He notes advantages and disadvantages of each possibility and ultimately remains agnostic regarding which is better (Ball 2008:284-291).

- b. *Na'e tō manioke 'a Sione*
 PAST plant cassava ABS Sione
 'Sione planted cassava.'

(Ball 2005b:10)^{33, 34}

In addition to licensing an NP as an argument, the head I am treating as D^0 has other determiner-like qualities. It arguably imparts potential referentiality, depending on one's interpretation of the nonspecific *ha*, and it is the locus of specificity, as encoded by *he*, although not definiteness. Thus, like Niuean, Tongan does not have a single head which fulfills all the roles customarily thought to belong to D^0 , but there is significant support for treating *he* and *ha* as determiners and the syntactic head which houses them as D^0 .

2.2.4. The Relationship of Specificity to Definiteness

As mentioned above, it has been noted that specificity is related to definiteness. As I am using the terms, specificity relates to whether or not the speaker has a referent in mind, and definiteness relates to whether or not the speaker assumes that this referent is shared with the listener. Lyons (1999) note that morphosyntactically, specificity distinctions only apply to indefinites (although he does note (pp. 171-172) that definite descriptions, such as 'the student who's going to give the presentation' can have non-referential interpretations). Cowper and Hall (2002) formalize this dependency in their proposed geometry of nominal features: Under the head D^0 , which makes a nominal phrase (potentially) referential, and thus suitable as an argument, the feature [DEFINITE] is only available if the feature [SPECIFIC] is present. The consequence of this is that definite DPs are always specific, whereas specific DPs may be definite or indefinite. Although specificity is encoded in Tongan determiners, definiteness is not; nevertheless, as will be shown later in this chapter, the dependency between the two is respected in its syntax.

³³Or 'some.'

³⁴Or 'Sione cassava-planted.'

2.3. Specificity and Definiteness in Tongan

Although Lyons (1999) does not address Tongan, he does mention Samoan and Māori in his discussion of specificity, suggesting that they fall into the third type of languages he identifies – those in which specificity sometimes indicates the ability to be interpreted with wide scope and sometimes indicates referentiality. Both of these languages have a determiner which marks wide scope in opaque contexts and referentiality in transparent ones, and another determiner which marks narrow scope in opaque contexts and non-referentiality in transparent ones. In these languages, he says, definiteness is combined with specificity: A specific DP is essentially ambiguous in terms of definiteness, but a non-specific DP is always indefinite.

Similarly, Tongan determiners mark something other than true definiteness. The distinction encoded by these determiners – particularly in relation to what has been termed the “definite accent” – has attracted significant attention from linguists. Churchward (1953) describes the distinction encoded by Tongan determiners as “completely indefinite” versus “semi-definite.” Others suggest that it encodes a specific/nonspecific distinction (Dukes 1996) or a referential/non-referential one. Hendrick (2005) argues that it is, in fact, a kind of definite-indefinite distinction, albeit a semantically different one than in English (he further argues that the definite accent encodes a second type of definiteness). As will be seen in the following discussion, I think specific-nonspecific is the most apt term for the distinction encoded by Tongan determiners, although the precise meaning of the term as it applies to Tongan is unclear.

Churchward (1953:24) describes what he calls the indefinite determiners in Tongan (*ha* and *si'a*) as “sometimes more indefinite than [English] *a* or *an*” and notes that they can be equivalent to English *any*. Later (p. 271), he states that *ha*-DPs in Tongan refer “not to one particular thing (or set of things) but merely to something or anything of the kind indicated.” The following examples illustrate this non-referential quality of *ha* (32).

- (32) a. *Fai ha tohi!*
 make *ha* letter
 ‘Write a letter!’
- b. *’Oku ou fie ma’u ha vai mafana.*
 PRES 1EX.SG want receive *ha* water warm.
 ‘I want some warm water.’
- c. *’Oku ’i ai ha vai mafana, pe ’ikai?*
 PRES DAT there *ha* water warm, or NEG
 ‘Is there any warm water here, or not?’

(adapted from Churchward 1953:24)

Note that in each of the examples in (32), either the referent of the *ha*-marked DP is non-existent (32a), or its existence is in question (32b, c). In fact, Churchward (1953:274) states that *ha* and *si’a* are “particularly common” in irrealis contexts such as negative, interrogative, and conditional clauses, as well as in commands and requests and when speaking of “an uncertain future.”

In describing *he* and *si’i*, Churchward notes (1953:27) that while *he* and *si’i* (without the definite accent) may appear to be “sometimes indefinite, sometimes definite, and sometimes between the two,” they are more accurately understood as consistently semi-definite. In most cases, when the definite accent is absent, he translates these as ‘a,’ even though he refers to them as definite articles. Later, (p. 271), he states that *he*-DPs refer to “one particular thing (or set of thing), or sometimes [...] to one particular kind of thing.” This last point, in fact, hints at a wrinkle in the treatment of *he* and *si’i* as SPECIFIC; I will return to this wrinkle later in this subsection.

The data below are from Churchward’s (1953) examples of the various uses of *he* without the definite accent. Note that in (33), the most natural English translation for *he* is ‘the,’ whereas in (34) (and in most other cases) the most natural English translation is ‘a.’

- (33) *Ko e hingoa 'o e fo'i tupe si'i tahá ko e tukumu'a;*
 PRED *he* name GEN_{OBJ} *he* ASP disk small one-DA PRED ***he tukumu'a***
ko e hingoa 'o e fo'i tupe lahi tah'á ko e tukumuli.
 PRED *he* name GEN_{OBJ} *he* ASP disk large one-DA PRED ***he tukumuli***
 'The name of the smallest disk is **the *tukumu'a***; the name of the largest disk is **the *tukumuli***.'

(adapted from Churchward 1953:273)

- (34) *Na'a nau langa 'a e fale mo'o Siale.*
 PAST 3.PL build ABS ***he house*** BEN Siale
 'They built a house for Charlie.'

(adapted from Churchward 1953:112)

Churchward's (1953) treatment of Tongan determiners provides a robust description and numerous illustrative examples, but it does not attempt to formalize what is encoded in the *ha/he* distinction beyond characterizing *ha* as "completely indefinite" and *he* (absent the definite accent) as "semi-definite." Other writers have analyzed the distinction as being one of specificity, but the uses of the term vary.

Dukes (1996), glossing *he* and *ha* as 'specific' and 'nonspecific,' respectively, treats specificity in Tongan as being equivalent to referentiality. Citing Clark (1974) and Chung (1978:23), he describes specific *he* and *si'i* as indicating that the speaker can identify a particular referent of the DP.

Similarly, Anderson and Otsuka (2006) focus on referentiality as the difference between *he* and *ha*. In order to skirt the problems associated with defining specificity, they gloss *he* and *ha* as 'referential' and 'non-referential,' respectively. Noting that *ha* occurs in irrealis contexts such as interrogative and negative sentences (as seen in Churchward's examples in (32), above), they suggest that it corresponds most closely to English *any*. Hendrick (2005) approaches the distinction between *he* and *ha* from a formal semantic perspective. He argues that a binary distinction such as that between definite and indefinite is not sufficient for describing the system, and argues that the ternary opposition in the morphology of Tongan determiners reflects "three distinct ways that Ds can shift the meaning of a sister NP." He

does not, however, refer to a specific/nonspecific distinction; rather, treating *he* as being, consistently, a definite determiner, and the presence or absence of the definite accent as distinguishing between two degrees of definiteness: When DA is present, “an iota operator [...] combines with NP to denote an entity.” When it is absent, “a choice function is used to pick out an entity.” *Ha*, being indefinite, “does not shift the type of its sister NP,” leaving this to be done by existential closure (p. 908). Thus, for Hendrick (2005), a DP is definite if it picks out an entity, regardless of familiarity, and regardless of whether this is by direct identification (iota operator) or by choice function.

Given the fact that *he* and DA are not in complementary distribution in Tongan – in fact, there is an implicational dependency of DA on *he* – Hendrick’s (2005) analysis implies the existence of two types of definiteness associated with distinct syntactic positions. It also seems to imply that one type of definiteness (identity) is somehow deficient and dependent on the presence of the other (choice function). His paper does not address this implied dependency, but it is intuitively problematic.

Moreover, Hendrick’s (2005) assumption that *he* marks definiteness because it picks out an entity via-choice function is not uncontroversial. As noted above, English *a* is treated as specific and indefinite when it picks out an entity which is “known to the speaker but not the hearer” (Cowper & Hall, 2002:3). Matthewson (1999) shows that non-polarity determiners in St’át’imcets, which are indefinite in the sense that they do not require previous mention, familiarity, or uniqueness, and can be used to introduce new referents, select entities via choice function which undergoes existential closure at the highest level, forcing wide-scope readings. She cites Reinhart (1997), Winter (1997) and Kratzer (1998) who argue that, in English, wide-scope indefinites also select entities via choice-function. As seen below, *he* (without the definite accent) does not correspond to the English definite article *the*, as *he* can be used to introduce new discourse referents not known to the speaker.

Analyzing *he* as a definite article is thus somewhat problematic. It is also inconsistent with the working definition of definiteness established above. In fact, as will be shown below, the

behaviour of *he* is consistent with that described by Lyons (1999) for markers of specificity. I propose that *ha* is both indefinite and nonspecific; *he* marks specificity, and definiteness is marked by the presence of DA, which is dependent on the presence of *he*, reflecting the dependence of definiteness on specificity.

Although I am not adopting Hendrick's (2005) terminology for the ternary distinction between *he* without DA, *he* with DA, and *ha*, I draw my conclusions about the nature of this distinction largely from the distributions he describes. These distributions are summarized in Table 3, below.

TABLE 3: DISTRIBUTION OF TONGAN DETERMINERS

	<i>he</i>		<i>ha</i>
	+DA	-DA	
superlative	yes	yes	no
opaque contexts	<i>de re</i>	<i>de re</i>	<i>de dicto</i>
scope relative to conditional	wide	wide or narrow	narrow
scope relative to universal quantifier	wide	wide or narrow	narrow
small-clause predicate nominal	no	yes	yes
matrix-clause predicate nominal	equational	predicational	predicational
existential	no	yes	yes

The distinction between *he* + DA (definite, in my analysis) and *ha* (nonspecific and indefinite) is clear from their distributions: *He* + DA can occur in superlative constructions, as in (33), above, and *ha* cannot. Conversely, *He* + DA cannot occur in existential

constructions, nor can it be the predicate nominal of a small clause, whereas *ha* can do both, as shown in (35a) and (35b), below (contrast with the ungrammatical 35c). Where both are allowed, as in opaque contexts and matrix-clause predicate nominals, Hendrick notes that they yield clear contrasts in meaning.

(35) a. *'Oku tau lau ia ko ha taki.*
 PRES 1INC.PL regard 3.SG PRED **ha leader**
 'We regard him (as) a leader.'

b. *'Oku 'i ai ha puaka 'i Māketi*
 PRES DAT there **ha pig** DAT market
 'There is a pig at the Market.'

c. **'Oku 'i ai e puaká 'i Māketi.*
 PRES DAT there **he pig-DA** DAT Market

(adapted from Hendrick 2005:910, 911)

On the other hand, the distribution of *he* without DA is complex: It overlaps with both *he+DA* and *ha*. In some cases, where there is such an overlap, there is a clear distinction in meaning; but in other cases, the distinction is subtle. Sometimes, there is no discernible distinction at all. In (36), we see that *he* is acceptable in superlative constructions with the definite accent (36a) or without it (36b). *Ha* would be unacceptable in this context. Hendrick (2005:912) notes that the superlative DPs in both (36a) and (36b) pick out unique entities, and he does not note any pragmatic difference.

(36) a. *ko e hinga 'o e fo'i tupe si'i tahá ko e tukumu'a*
 PRED *he* name GEN_{OBJ} **he** ASP ball small one-DA PRED *he* tukumu'a
 'The name of the smallest ball is the *tukumu'a*.'

- b. *ko hoku kaume'a ofi taha ko e ta'ahine*
 PRED *he-GEN_{OBJ}-1.SG friend close one* PRED *he girl*
Tonga faka'ofa'ofa mo angamalū ko Lusi Naufahu
 Tonga beautiful and gentle PRED
 'A beautiful and gentle Tongan girl, Lusi Naufahu, was my closest friend.'
 (Hendrick 2005:911³⁵, 912³⁶)

In (37) we see that *ha* and *he* without DA are both acceptable in existential sentences, but *he* +DA is not. If we treat *he* + DA as definite and *he* without DA as a kind of indefinite, this is consistent with cross-linguistically observed definiteness effects. Here, the meaning difference between the two grammatical sentences is subtle: Hendrick (2005:911) notes that the pig referred to in sentence (37b) “may be unique, but need not be.”

- (37) a. *'Oku 'i ai ha puaka 'i Māketi*³⁷
 PRES DAT there *ha pig* DAT market
 'There is a pig at the Market.'
- b. *'Oku 'i ai e puaka 'i Māketi*
 PRES DAT there *he pig* DAT Market
 'There is a pig at the Market'³⁸
- c. **'Oku 'i ai e puaká 'i Māketi.*
 PRES DAT there *he pig-DA* DAT Market
 (adapted from Hendrick 2005:910, 911)

The allowability of *he* without DA in both superlative and existential sentences presents a challenge; the former suggests that it is definite, and the latter that it is indefinite. Lyons

³⁵Citing Churchward 1953:122.

³⁶Citing Fanua, T. P. (1982), *Po tatala*, p. 1.

³⁷Otsuka (p.c.) informs me that her and consultants' intuitions are that (37a) is more felicitous as a question, as to them *ha* is dispreferred in non-irrealis contexts.

³⁸Hendrick translates this sentence as 'There is the pig at the Market,' although he notes that the referent of *e puaka* is not necessarily unique. I have chosen to translate both *he* and *ha* here as 'a' because the resulting English sentence is both grammatical and ambiguous between specific and non-specific readings.

(1999) observes a similar wrinkle in English: Both definite and indefinite are allowed in superlative constructions when these are used descriptively (with a figurative interpretation), as in (38). Moreover, definite superlative constructions are allowed in existential sentences, as long as they have figurative interpretations, as in (39).

(38) *I met **a/the most intriguing girl** at the party.*

(adapted from Lyons 1999:247)

(39) a. *Thr's³⁹ **the strangest man I've ever met** in the drawing room.*

b. **Thr's **the brightest student in the class** leading the seminar today.*

(Lyons 1999:247-248)

The pattern followed by these idiomatic definites in English is similar to that followed by DPs headed by *he* (without DA) in Tongan: Both can occur, like true definites, in superlative contexts, but neither can occur in existentials. Lyons (1999) argues that these idiomatic definites in English are grammatically definite but semantically indefinite, and that sentences such as (39) show that the definiteness effect observed in existential constructions is semantic, rather than syntactic. If this cross-linguistically observed definiteness effect has similar underpinnings in different languages, this provides evidence that *he* without DA is semantically definite in some sense, not just syntactically so.

Returning to Hendrick's (2005) observations about the distribution of Tongan determiners and DA, we see that in small-clause predicates, as in existentials, both *ha* and *he* without DA are acceptable, but *he* +DA is not (40). Again, Hendrick (2005) notes that it is unclear whether there is a salient difference in meaning between the two grammatical sentences.

³⁹In his examples, Lyons (1999) uses *thr* to represent the non-localizing, existential use of English *there* in order to distinguish it from its localizing homograph.

- (40) small-clause predicate DP
- a. 'Oku tau lau ia ko **ha taki**.⁴⁰
 PRES 1INC.PL regard 3.SG PRED **ha** leader
 'We regard him (as) a leader.'
- b. 'Oku tau lau ia ko **he taki**.
 PRES 1INC.PL regard 3.SG PRED **he** leader
 'We regard him (as) a leader.'⁴¹
- c. * 'Oku tau lau ia ko **he taki**.
 PRES 1INC.PL regard 3.SG PRED **he** leader-DA

(Hendrick 2005:911)

One context in which all three options are available is opaque contexts, such as (41). Here, *he* – with or without DA – always yields a *de re* reading, whereas *ha* always yields a *de dicto* reading (Hendrick 2005:914). When the definite accent is present, the referent must have a discourse antecedent; when it is absent, the referent is novel to the discourse (p. 915). In other words, *he* – with or without DA – indicates referentiality and wide scope here – specificity, in the sense of Lyons (1999). The presence of DA adds to this that the referent of DP is identifiable to the hearer, *i.e.* definite, in Lyons' (1999) sense.

- (41) a. 'Oku kumi 'a Sioasi ki **ha fefine poto**.
 PRES seek ABS Sioasi DAT **ha** woman clever
 'Sioasi is looking for a clever woman.'
de dicto: Any clever woman will do.

⁴⁰In each of the examples in (40) and in (44), *ko* should trigger allomorphy of *he* to *e* (Churchward 1953:23; Otsuka (p.c.)), but I reproduce these data as they appear in Hendrick (2005). Likewise with *mo he* in (45b).

⁴¹Here, the translation of *he* as 'a' is true to Hendrick's (2005) translation of this sentence.

- b. *'Oku kumi 'a Sioasi ki he fefine potó.*
 PRES seek ABS Sioasi DAT **he woman clever-DA**
 'Sioasi is looking for the clever woman.'
de re: Sione has a particular woman in mind (and she has been previously mentioned in this discourse).
- c. *'Oku kumi 'a Sioasi ki he fefine poto.*
 PRES seek ABS Sioasi DAT **he woman clever**
 'Sioasi is looking for a clever woman.'
de re: Sione has a particular woman in mind (but she has not been previously mentioned in this discourse.)
- (adapted from Hendrick 2005:914-915)

This example suggests that the distinction between *he* (with or without DA) and *ha* can be understood in terms either of scope or of reference. With *he*, which yields an unambiguous *de re* reading, *fefine poto/ó* 'clever woman' scopes over *kumi* 'look' and refers to a particular entity. With *ha*, which yields an unambiguous *de dicto* reading, *fefine poto* 'clever woman' scopes below *kumi* 'look' and does not pick out a particular entity.

In other contexts, however, *he* without DA may take narrow scope, suggesting that a scopal definition of specificity in Tongan may not be precise. Hendrick (2005) offers the conditional sentences in (42) as examples. All of these examples involve *he* without DA. In (42a), *he siasi 'e taha* 'one church' scopes below *kapau* 'if,' whereas in (42b), *e 'ū sea* 'the seats' scopes above *kapau* 'if.'

- (42) a. *Kapau 'e tauhi 'e he siasi 'e taha, 'e fēfē*
 if SBJV observe ERG **he church** SBJV **one,** SBJV how
'ae ngaahi siasi ko ē?
 ABS+*he* PL church PRED other
 'If one church observes it, then what about the others?'

- b. *Kapau 'e lahi ange 'i he vacua 'a e 'ū sea 'oku ma'u*
 if SBJV big more DAT *he* half ABS *he* ASP seat PRES catch
'e ha paati 'i he Falealea
 ERG *ha* party DAT *he* Parliament....
 'If a party captures more than half of the seats in Parliament....'
 (*lit.* 'If the seats captured by a party in Parliament are more than half....')
 (adapted from Churchward 1953:270)

In (43), *'ene sota* 'his or her soda,' is ambiguous: It may take narrow scope (such that the antecedent of *'ene* is *he tokotaha kotoa* 'each one,' and everyone drinks from his or her own soda) or wide scope (such that the antecedent of *'ene* is a previously mentioned individual, and everyone is drinking that person's soda). Note that the pronoun, *'ene*, includes in its morphosyntactic structure the determiner *he*, which I claim encodes specificity.⁴²

- (43) *'Oku inu he tokotaha kotoa 'ene sota.*
 PRES drink *he* individual all GEN_{SBJ} +*he*+3.SG soda
 'Each person_i was drinking his (or her)_{i/j} soda.'
 (Hendrick 2005:917)

An ambiguity such as that seen in (43) is not surprising in the equivalent English sentence, 'Every person was drinking her soda,' since English does not grammaticalize the distinction between specific (wide-scope) and non-specific (narrow-scope) indefinites. It is, however, informative in Tongan, given that *'ene* ('his/her') contains the determiner *he*, which I am claiming encodes specificity. The determiner portion of this kind of possessive pronoun in Tongan encodes information about the possessum – in this case, the soda – so the availability of a narrow-scope reading here suggests that specificity in Tongan does not necessarily imply uniqueness or wide scope. Looking back to (41c), it seems that the wide-scope reading associated with *he* may in fact be secondary to referentiality.

⁴²As discussed in section 2.5, below, possessive pronouns in Tongan are morphologically and syntactically complex and comprise several syntactic categories. Those which I call possessive determiners consist of a pronominal element, a possessive element, and a determiner. (*He*) *'ene* 'his' (*'ene* in (13)) consists of *he* + *'a* + *ne* and thus is a third-person singular, specific, non-diminutive, possessor-dominant possessive determiner.

Another setting in which all three options – *ha*, *he* without DA, and *he* with DA – are acceptable is in matrix-clause predicate DPs, as seen in (44). Both *ha faiako* (44a) and *he faiako* (without DA) (44b) are translated ‘a teacher’ by Churchward (1953) and Hendrick (2005), but there is a subtle difference between them: *Ha faiako* (44a) can be used to mean, roughly, that the person in question is one of a known group of teachers, whereas *he faiako* (without DA), as in (44b), contrasts being a teacher with being (for example) a doctor or a lawyer (Churchward 1953:25, Hendrick 2005:911). Hendrick takes this to mean that the property of being a teacher is uniquely instantiated. However, this is not the same as *he faiakó*, ‘the teacher’ (44c), in which case the identity of the subject is being equated with that of a known and salient teacher.

- (44) a. *Ko ha faiako ia*
 PRED **ha teacher** 3.SG
 ‘He is a teacher.’ (predicational, not uniquely instantiated)
i.e. ‘He is one of the teachers.’
- b. *Ko he faiako ia*
 PRED **he teacher** 3.SG
 ‘He is a teacher.’ (predicational, uniquely instantiated)
i.e. ‘He is not a minister or a doctor or a lawyer or a gardener, etc., but a teacher.’
- c. *Ko he faiakó ia*
 PRED **he teacher-DA** 3.SG
 ‘He is the teacher.’ (equational)
- (Churchward 1953:25, Hendrick 2005:911)

A similar example can be seen in (45). Both *ha afo* (45a) and *he afo* (without DA) (45b) are translated as ‘a fishing-line.’ But again, Churchward notes a distinction between the two, which relates to whether the speaker means “one fishing-line out of all the fishing-lines” (45a) or “thinks of a fishing-line as distinguished from [...] a net or a spear or a rope” (45b). Only *he afo* (with DA) (45c) is treated as equivalent to the English definite ‘the fishing-line.’

- (45) a. *Ha'u mo ha afo.*
 come with **ha fishing-line**
 'Bring a fishing line.' (not uniquely instantiated)
i.e. 'One fishing line out of all the fishing lines.'
- b. *Ha'u mo e afo.*
 come with **he fishing-line**
 'Bring a fishing line.' (uniquely instantiated)
i.e. 'A fishing line, as distinguished from ... a net or a spear or a rope'
- c. *Ha'u mo e afó.*
 come with **he fishing-line-DA**
 'Bring the fishing line.'

(adapted from Churchward 1953:25)

The contrast between *ha* and *he* without DA in (44) and (45) is difficult to account for in terms of specificity and non-specificity. Hendrick (2005:911) suggests that the contrastive reading of *he* without DA in these contexts shows that *he* indicates that the NP property is uniquely instantiated by the DP.⁴³ This does seem to suggest that existential closure with *he* happens earlier than it does with *ha*, which is consistent with Hendrick's analysis and with a more generalized notion of specificity (Matthewson 1999). On the other hand, the presence of *ha* seems to indicate that the subject is one of a known set of teachers, suggesting that it encodes a covert partitive, something which has been associated with specific, rather than non-specific indefinites (Enç 1991). One possibility is that *he* without DA here is being used as a special kind of generic; however, Hendrick (2005:917) notes that generics in Tongan occur both with and without DA.

When I tried to elicit similar sentences and judgements from my own consultant, I had similar results for *he* with and without DA: In a context such as *Ko Sione 'oku ne ngaau'e 'i he fale*

⁴³ Hendrick (2005) does not seem to be consistent on the matter of whether *he* (without DA) in matrix-clause predicates yields a predicational or an equational use. He first states (p. 910-911) that *he* +DA "expresses the equational use [...] the indefinite DP [headed by *ha*] is used predicationally [... and] the definite DP without the definite accent is also used as predicative nominal." Later, he seems to contradict this analysis, stating (p. 920) that "Predicate nominals headed by *he* without the definite accent will class as equational, asserting the equivalence of the entity that is the value of the choice function with the grammatical subject."

kai ‘Sione works in a restaurant,’ (46a), the most felicitous continuation was, *ko e ngaahi kai*, using *he* without DA, regardless of whether I asked for ‘he is a cook’ or ‘he is the cook’ (46b). My consultant’s explanation for rejecting *ha* was to say that there is only one cook in a restaurant. When I suggested that Sione might work in a large restaurant with many cooks, of which he was just one, she offered *ko e toko taha ngaahi kai*, literally ‘he is one cook,’ (46c) suggesting that, for her, *ha* does not express a covert partitive.

- (46) a. *Ko Sione 'oku ne ngaau'e 'i he fale kai...*
 PRED Sione PRES 3.SG work DAT *he* house food
 ‘Sione works in a restaurant...’
- b. ... *ko e ngaahi kai.*
 PRED ***he*** maker food.
 ‘... he is a cook.’
- c. ...*ko e toko taha ngaahi kai*
 PRED ***he*** CL **one** maker food
 ‘...he is one (of the) cook(s).’
- d. * ...*ko ha ngaahi kai.*
 PRED *ha* maker food
- e. *...*ko e ngaahi kai*
 PRED *he* maker food-DA

(FN:LMK 2009)

Similarly, asked how to say, ‘Mele works in a/the hospital,’ my consultant indicates that *he fale mahaki* (without DA) (47a) is generally preferred. *He fale mahaki* (with DA) (47b) is only preferred when the hospital has been mentioned in the current discourse, although she considers it acceptable (but dispreferred) in contexts where it has not been mentioned if the speaker and hearer both know that there is only one hospital. *Ha fale mahaki* is dispreferred even given a context in which there are many hospitals around (47c).

- (47) a. *Ko Mele 'oku ne ngaau'e 'i he fale mahaki.*
 PRED Mele PRES 3.SG work DAT **he house sick**
 'Mele works in a hospital.'
- b. *Ko Mele 'oku ne ngaau'e 'i he fale mahaki.*
 PRED Mele PRES 3.SG work DAT **he house sick-DA**
 'Mele works in the hospital'
 (the only one possible, based on shared knowledge, or the one we have been speaking about)
- c. **Ko Mele 'oku ne ngaau'e 'i ha fale mahaki*
 PRED Mele PRES 3.SG work DAT **ha house sick**

(FN:LMK 2009)

In both (46) and (47), my consultant disprefers *ha*, even when a covert partitive reading is intended. Her judgements seem to be more in line with the analysis of Anderson and Otsuka (2006), for whom *ha* is non-existential and is essentially a polarity item.

Interestingly, in (44), Hendrick (2005) seems to indicate that unique instantiation is not sufficient for use of the definite accent; he states, rather, that *he faiakó* is only felicitous when the identity of the teacher is known and salient. Similarly, in (47), LMK disprefers the use of the definite accent unless the hospital where Mele works has been previously mentioned. While she accepts the use of the DA in a context where the hospital has not been mentioned but is uniquely instantiated, she disprefers it to *he* alone. This suggests that definiteness in Tongan, while very similar to definiteness in English, is not quite identical. This, I propose, is due to a subtle difference between anaphoric and non-anaphoric definiteness.

Lyons (1999:53-54) notes that some languages possess a class of discourse-anaphoric definite articles; others possess a deictically neutral member of the demonstrative paradigm which is interpreted as anaphoric (Lyons 1999:113-114). For him, the distinction between anaphoric definite articles and anaphoric demonstratives is strictly morphosyntactic: The two classes can be distinguished via co-occurrence restrictions, position, and ability to bear stress. He further notes that in some languages, such as Hausa and Lakhota, anaphoric and general definite articles co-exist; they are close (even overlapping) in meaning but not identical. In

such languages, he proposes that anaphoric definites are used “when the task of referent identification is [...] greater,” and that it “serves to direct the hearer to the preceding discourse rather than seeking a situational referent” (Lyons 1999:53). This, coupled with the indications noted above that uniqueness is not always sufficient for felicitous use of the definite accent, is consistent with the analysis of the DA as a marker of definiteness via anaphoric deixis.

Developing a formal semantic analysis of the Tongan determiner system will necessitate a great deal more study and data; thus, I will refrain from offering one. However, I conclude here that *ha* is both indefinite and nonspecific (in the sense that it is non-referential and takes narrow scope), *he* + DA is both definite and specific by all standard definitions (in that it is referential, encodes uniqueness and identifiability to both listener and hearer, and observes cross-linguistic definiteness effects), and *he* without DA encodes something intermediate, which I will call *specificity*.

Table 4 compares the English and Tongan determiner systems in terms of their encoding of definiteness and specificity. The distinction between specific and nonspecific indefinites in English is obscured by syncretism: Both may be spelled out as *a* (Cowper & Hall 2002), yielding ambiguous readings, particularly in opaque contexts. On the other hand, definiteness is excluded from the Tongan determiner system.

TABLE 4: COMPARISON OF ENGLISH AND TONGAN DETERMINER SYSTEMS

	Indefinite		Definite
	Non-Specific	Specific	
English	<i>a(n)</i>		<i>the</i>
Tongan	<i>ha, si'a?</i>	<i>he, si'i</i>	<i>he, si'i + DA</i>

What Table 4 does not capture is that specificity in English and in Tongan may not be quite the same thing. The variety of specificity encoded by *he* is loosely associated with

uniqueness, referentiality, and wide scope, but it does not directly encode any of these. This together with my consultant's judgements suggest that there is need for further investigation into the semantics and pragmatics of specificity and non-specificity in Tongan.

2.4. Diminutive Determiners

As noted at the beginning of this chapter, Tongan determiners encode more than just specificity. The determiners *si'a* and *si'i* are the diminutive equivalents of *he* and *ha*, respectively. Morphologically, they are formed by the fusion of the adjective *si'i* ('small') with *he* and *ha*. Churchward (1953) seems to have been the first to refer to *si'i* and *si'a* as "emotional" determiners. Dukes (1996) and Hendrick (2005), citing Churchward (1953), adopt this convention in their glosses but say little else about it; other authors do not deal with *si'a* and *si'i* at all. According to Churchward (1953:23), these determiners are used to indicate "that the speaker's thought is coloured [...] by feelings of affection, pity, humility, or respect." Their use is illustrated in (48) below: *si'a* is illustrated in (48a) and *si'i* in (48b).

- (48) a. *Kuo lavea si'a tamasi'i?*
 PERF hurt *si'a* child
 'Has a (little) child been hurt?'
 b. *'Oku hela 'a si'i hōsi.*
 PRES tired ABS *si'i* horse
 'The poor horse is tired.'

(adapted from Churchward 1953: 23, 24)

In (48) the treatment of *si'i* and *si'a* as diminutive determiners seems rather straightforward. In both cases, the DP they mark is an object of pity or sympathy. In (49), however, this is not so clear. In (49a), the Christian Endeavourers Society is, presumably, not the object of pity

but of respect. In (49b), it is the food, *si'a me'atokoni*,⁴⁴ which is marked with a diminutive determiner, but it is not likely the food towards which the speaker feels affection, pity, or respect, but the person who is receiving it.

- (49) a. *Na'e fakatefua ki Neiafu 'a si'i kāinga akolotú.*
 PAST assemble DAT Neiafu ABS SPEC-DIM comrade CES⁴⁵
 'The Christian Endeavourers assembled at Neiafu'
- b. *Na'a nau 'omi ia ki 'api ke ne ma'u si'a me'atokoni*
 PAST 3.PL bring 3.SG DAT home COMP 3.SG have *si'a* food
 'They brought him home that he might have some food.'
- (adapted from Churchward 1953:23)

Cross-linguistically, diminutive affixes are used to express smallness and, by semantic extension, youth, affection, and the speaker's sympathy towards a referent (Jurafsky 1996). Diminutiveness is most often expressed through derivational affixes on nouns, but can also be realized as classifier-like elements (Wiltschko 2006) or as an inflectional category realized morphologically through agreement, as in the Papuan language Walman (Brown & Dryer, ms). The Tongan determiners *si'i* and *si'a* clearly meet the semantic and pragmatic criteria for being deemed diminutive. The particle *si'i* in Tongan has a complex distribution, occurring not only in these determiners but also as a derivational affix in words such as *tamasi'i* 'child' (*lit.* 'small man') and, as noted above, as an independent adjective meaning 'small.'

⁴⁴The usual word for food, according to Churchward (1959) is *me'akai* (literally 'eating thing') or simply *kai* (also a verb meaning 'eat'). *Tokoni*, which literally means 'help' is a polite form for 'eat' (Churchward 1953:304, 1959:490) and *me'atokoni* is a polite form for 'food' (Churchward 1959: 356). According to Churchward (1953), Tongan has five distinct levels of politeness, marked by differing lexical items. These are, in his terminology: ordinary, polite, honorary (used when speaking to nobles), regal (used when speaking to the royal family), and derogatory – the last of these being used when referring to oneself or one's own possessions when speaking to persons of a higher rank.

⁴⁵According to the *Tongan Dictionary* (Churchward 1959), *akolotu* is a noun referring to an organization known in English as the Christian Endeavours Society, a member of this organization, or a meeting of this organization.

2.5. Morphology and Syntax of Tongan Demonstratives and Determiners

2.5.1. Morphophonology of the Definite Accent

As noted above, the definite accent is generally described as a rightward stress shift at the right edge of a definite DP. In Tongan, primary stress normally falls on the penultimate vowel of a prosodic word, when the final vowel is monomoraic, and on the final vowel of a prosodic word when that vowel is bimoraic (Churchward 1953, Feldman 1978).⁴⁶ When nominal phrase ends in a short vowel, the definite accent seems to simply move the stress from the penultimate to the final vowel.

The definite accent is illustrated in examples (50) and (51), below. Example (50) illustrates the three-way contrast between *ha* (nonspecific), *he* without the definite accent (specific, indefinite), and *he* with the definite accent. Example (51) illustrates that the definite accent occurs at the right edge even of complex DPs.

- (50) a. *Na'a ku fa'o ia ki ha puha*
 PAST 1EX.SG put 3.SG DAT NONSPEC **box**
 'I put it into a box' (some box or other)
- b. *Na'a ku fa'o ia ki he puha*
 PAST 1EX.SG put 3.SG DAT NONSPEC **box**
 'I put it into a box' (one particular box)
- b. *Na'a ku fa'o ia ki he puhá.*
 PAST 1EX.SG put 3.SG DAT NONSPEC **box-DA**
 'I put it into the box.'

(adapted from Churchward 1953:272)

⁴⁶For the purposes of this discussion, I am identifying a prosodic word in Tongan as a lexical word – all of which are at least bimoraic (Krupa 1971) plus any light (monomoraic) grammatical words or clitics which are phonologically adjoined to its right edge (Taumoeofolau 2002, Anderson & Otsuka 2006).

- (51) a. *'oku mahino 'a e me'á*
 PRES clear ABS SPEC **thing-DA**
 'The thing is clear.'
- b. *'oku mahino 'a e me'a kuo hokó*
 PRES clear ABS SPEC thing PERF **happen-DA**
 'The thing which has happened is clear.'
- c. *'oku mahino 'a e me'a na'a nau fai*
 PRES clear ABS SPEC thing PAST 3.PL **do-D.A.**
 'The thing which they did is clear.'
- d. *'oku mahino 'a e me'a na'a nau fai 'aneafi*
 PRES clear ABS SPEC thing PAST 3.PL do **yesterday-DA**
 'The thing which they did yesterday is clear.'

(adapted from Churchward 1953:7-8)

Clark (1974) proposes that the definite accent is a phrasal enclitic from the demonstrative series – the missing form in the paradigm given in Table 1. The first- and second-person demonstrative clitics are *-ni* and *-na*, respectively; these correspond, roughly, to the demonstrative determiners *this* and *that* in English. They encliticize to the right edge of the NP they modify, triggering a rightward stress shift in the final word thereof. They also form the morphological root of the demonstrative, locative, and directional pronouns – which are phonologically independent.

According to Clark (1974) and Churchward (1953), the first- and second-person demonstratives have the senses 'near speaker' and 'near addressee,' respectively. The third-person demonstratives, whose historical antecedents would have had meant "distant from both speaker and addressee" (Clark 1974:107), now "refer simply to what I (the speaker) am pointing to, whether actually or only in imagination, no matter whether it be near me, or near you, or somewhere else" (Churchward 1953:151, cited in Clark 1974:104); Clark further states that he considers them "purely referential marker[s] of definiteness" (Clark 1974:107). I identify this type of definiteness as anaphoric deixis, as described by Lyons (1999) and Ross (2004).

Clark (1974:104) argues that the gap in the paradigm corresponds to a former third-person demonstrative clitic, *-a**,⁴⁷ which has lost all of its phonological specification and is now fully assimilated to whatever vowel precedes; this assimilation has “led to a reinterpretation of this enclitic as lengthening of the final vowel” (p.107). A short (monomoraic) vowel becomes long, and a long (bimoraic) vowel, he speculates, might become longer (trimoraic). The foot-structure of the word is then altered order to maintain the alignment of the rightmost foot with the rightmost edge of the phonological word (Prince & Smolensky 1993, Schütz 2001, Taumoeofolau 2002, Anderson & Otsuka 2006).

Although there is some disagreement about the nature of syllables and metrical feet in Tongan, and more disagreement about the accuracy of Clark’s (1974) analysis of the definite accent, researchers generally agree on the following descriptive facts about stress in the absence of the definite accent: When a word ends in a long vowel, that vowel is stressed; and when a word ends in a short vowel, the preceding one is stressed. The most common explanation (e.g. Clark 1974, Prince & Smolensky 1993, Schütz, 2001, Taumoeofolau 2002, Anderson & Otsuka 2006) is as follows: The right edge of each phonological word is aligned with the right edge of a metrical foot; the final foot in a word bears primary stress; within each foot, stress falls on the penultimate mora.⁴⁸ Those who accept Clark’s (1974) analysis of the definite accent are generally in agreement, therefore, that the apparent “shift” in stress is caused by the rightward expansion of the phonological word by the addition of a mora, triggering a realignment of the metrical feet.⁴⁹

⁴⁷Clark (1974) argues for **-a*, rather than **-e* as the reconstructed form on the basis of several sound changes that are thought to have taken place between PPN and modern Tongan. As the explanation is complex and rather lengthy, I refer the interested reader to Clark (1974) rather than replicate his argument here.

⁴⁸Schütz (2001), and Taumoeofolau (2002), using different terminology, both analyze the metrical feet of Tongan as being variably bi- or tri-moraic, with stress falling on the penultimate mora. Both of them avoid the use of the terms *foot* and *mora*. In place of *foot*, Schütz (2001) uses *measure* and Taumoeofolau (2002) uses *stress group*. In place of *morae*, Schütz (2001) refers to the units of vocalic length as vowel segments (V), whereas Taumoeofolau (2002) refers simply to syllables, treating all syllables in the language as short and all apparent long vowels as disyllabic.

⁴⁹Poser (1985), adopting a strong lexicalist hypothesis, proposes that the affixation of the DA, although syntactically phrasal, is achieved morphologically by the generation in the lexicon of DA-inflected versions of “every word that can appear rightmost in a definite NP” (p.8). This approach is set aside here.

Since Clark (1974), the definite accent has been the subject of at least two experimental acoustic studies which have sought evidence for or against the null-mora hypothesis. Condax (1989) finds partial support for it – specifically, she finds evidence that a final short vowel is lengthened by the definite accent, although it does not become as long as a stressed long vowel is elsewhere; and she finds that a final long vowel is not significantly lengthened. Schütz (2001), using Condax’s (1989) measurements as evidence, argues against Clark’s (1974) analysis, proposing that the definite accent is best understood as a redistribution of stress across the final two morae of a word, and that this, in turn, causes lengthening of a final short vowel. Taumoeolau (2002), a native speaker of Tongan, criticizes Condax’s experimental design, arguing that some of her test phrases would not naturally have been pronounced with a definite accent, and proposes that improved testing would yield more complete support for Clark (1974).

Anderson and Otsuka (2006) redo Condax’s (1989) experiments, correcting what Taumoeolau (2002) identifies as errors of experimental design. They find what they claim is more robust evidence in favour of Clark’s (1974) analysis. Most significantly, they find that when the definite accent targets an underlying short (monomoraic) vowel, it become as long as an unstressed, long (bimoraic) vowel in the same position; in other words, it essentially becomes bimoraic. Moreover, they find that when the definite accent does not cause a audible stress shift, because the final vowel of a definite DP is already long (underlyingly bimoraic), this vowel is lengthened by about 30%; in other words, they argue, it actually becomes trimoraic.⁵⁰ They conclude that the definite accent is best understood as described by Clark (1974): A monomoraic enclitic on a definite noun phrase which derives its feature specification from the immediately preceding vowel.

Historical reconstruction and phonetic measurements thus support an analysis that definiteness in Tongan is marked by the presence of an enclitic from the demonstrative

⁵⁰Short, final vowels without DA have a mean duration of 132 ms. Short, final vowels with DA have a mean duration of 240ms. Long, final vowels and diphthongs without DA have a mean duration of 245 ms. Long, final vowels with DA have a mean duration of 338 ms (Anderson & Otsuka 2006).

paradigm which has lost its feature specification for person deixis. There is, however, a problem with treating the definite accent straightforwardly as a taxonomic sister to the other demonstrative particles *-ni* and *-na*: Specifically, the DA does not surface in the same positions as these particles do. Whereas the definite accent occurs at the right edge of a nominal expression, *-ni* and *-na* appear closer to N^0 . I propose that this is because the definite accent is merged high, above D^0 , whereas the other demonstrative clitics are merged low, within NP. Roll-up movement yields the right-peripheral spellout position of DA.

Before elaborating on this analysis, I turn my attention to the Tongan demonstrative paradigm more broadly. First, I examine the demonstrative clitics *-ni* and *-na*, which exhibit some variation in spellout position (section 2.5.2). Following this, I present a survey of demonstratives and definiteness markers in related languages as well as Ross's (2004) historical explanation for the variation therein (2.5.3.). In 2.5.4., I present my analysis of the syntax of deixis – including definiteness – in Tongan.

2.5.2. The spatial demonstrative clitics *-ni* and *-na*

There is some disagreement in the literature about the spellout position of *-ni* and *-na*. They appear to be enclitic either on the NP (Ahn 2012, FN:LMK) or on the head noun itself (Churchward 1953, Tu'inukuafe 1992, FN:LMK). Churchward (1953:152) analyses them as adjectives and describes their position as “After a common noun qualified by a definite article [... or] After a common noun qualified by a possessive pronoun [... or] After a local noun.” Tu'inukuafe (1992:33), likewise, calls them adjectives; he states that they are “enclitic particles which follow nouns,” noting that they trigger a stress shift in the noun and “sound as if [they] are part of the nouns.” Ahn (2012), however, describes them as enclitic on NP, following post-nominal adjectives but preceding relative clauses, as shown in (52) and (53), below. According to Ahn (2012:7), *-ni* and *-na* can never precede a post-nominal adjective (52b) nor follow a relative clause (53b).

- (52) a. *'oku lele 'a e kumaa 'i [he fale fo'ou]-ni*
 PRES run ABS SPEC mouse DAT SPEC **house new -ni**
 “The mouse is running in this new house.”
- b. **'oku lele 'a e kumaa 'i he fale ni fo'ou*
 PRES run ABS SPEC mouse DAT SPEC **house -ni new**

(Ahn 2012:2)

- (53) a. *'oku ma'a 'a e sote-na [na'a ku foo]*
 PRES clean ABS SPEC **shirt-na PAST 1EX.SG wash**
 “That shirt that I washed is clean.”
- b. **'oku ma'a 'a e sote na'a ku foo-na*
 PRES clean ABS SPEC shirt PAST 1EX.SG wash-na

(Ahn 2012:7)

It is not entirely clear whether Ahn’s (2012) consultants’ judgments are in conflict with those of Churchward (1953) and Tu’inukuafe (1992), as these authors do not address the question of where the demonstrative clitics fall relative to post-nominal modifiers (although Tu’inukuafe’s (1992:33) description that they “sound as if [they] are part of the noun” suggests that the clitics precede modifiers. My own fieldwork does not yield the same results as Ahn’s (2012); specifically, in (54) below, LMK accepts only the order in (54a), where *-na* immediately follows the head nominal *pepa* “paper;” she does not accept *-na* after the adjective (54b) or the numeral (54c). Similarly, she strongly prefers (55a), wherein *-na* directly follows the noun *tama'iki* “boy,” to (55b), in which it follows the post-nominal modifier *fakaofa'ofa* “beautiful,” stating that the latter is “right but not as good.”

- (54) a. *To'o mai 'a e fanga ki'i pepa-na lanu pulu 'e nima.*
 bring to-me ABS SPEC ASP small **paper-na** colour blue COMP five
 “Bring me those five blue booklets.”
- b. **... 'a e fanga ki'i pepa lanu pulu-na 'e nima*
- c. **... 'a e fanga ki'i pepa lanu pulu 'e nima-na*

(FN:LMK 2013)

- (55) a. *Ko e tōketā 'oku tokoni ki he fanga ki'i tamaiki-na*
 PRED SPEC doctor PRES help DAT SPEC ASP small **boy-na**
faka'ofa'ofa
 beautiful
 “It’s the doctor who is helping those cute little boys.”
- b. ²/*...*ki he fanga ki'i tamaiki faka'ofa'ofa-na*

(FN:LMK 2013)

Tongan texts contain very little data in support of (or against) either description. Written instances of demonstrative clitics are uncommon,⁵¹ and among these, instances in which the demonstrative clitic co-occurs with another modifier seem to be extremely rare.⁵² The one example I was able to find (Gifford 1924:135) is given below, in (56). Note here that Gifford writes *matamahae* “torn-eye” as a single word; without phonological data, it is unclear whether *-ni* here is enclitic on a nominal phrase or simply on a compound noun (the context is quoted speech within a folk narrative. The speaker is addressing a stranger with a visibly scarred eye who has appeared at her door).

- (56) *Ae matamahae ni ke ke puna o alu.*⁵³
 oh **eye-torn** **ni** COMP 2.SG fly and go
 “Oh, this big torn eye, you fly away and go.”

(Gifford 1924:135)

⁵¹An exception to this is place names (local nouns), which are frequently followed by *-na*, as noted by Churchward (1953). These tend not to occur with adjectives or other modifiers.

⁵²According to LMK, a speaker has to be seen pointing at a referent in order for *-ni* or *-na* to be meaningful (although she has noted that *-na* may be acceptable when conversing by telephone, if the speaker has recently been in the listener’s environment and is referring to an object he or she knows to be there). Perhaps the scarcity of demonstratives co-occurring with other modifiers reflects that pointing and describing are suited to different discourse situations. Similarly, Bernstein (1997:102-105) proposes that deictically interpreted demonstratives are cross-linguistically incompatible with restrictive relative clauses, but indefinite-specific interpretations of demonstratives are not. I return to a discussion of her proposal in section 2.5.5, below.

⁵³This text does not mark the initial glottal stop (rendered in modern Tongan orthography as <’>) in the words *'ae* (GEN+SPEC) *'o* (and), or *'alu* (go).

This suggests that the spell-out position of the demonstrative clitics *-ni* and *-na* is subject to some variation. One possibility is that they are sometimes enclitic on N^0 and thus precede post-nominal modifiers within NP; other times, they are enclitic on NP and thus follow them. As noted in Chapter 1, the heaviness of the adjective seems to play a role, suggesting that the variation happens at PF. Regardless of whether they are enclitic on N^0 or NP, however, it does seem clear that the position of the spatial demonstratives is distinct from that of the definite accent (DA).

As described by Churchward (1953) and in section 2.5.1., above, the definite accent normally falls at the right edge of DP, following not only the head noun and its modifying adjectives, but also relative clauses. Again, Ahn's (2012) consultants' judgements differ somewhat. For them, as for Churchward (1953), the default position of the definite accent is after a relative clause, if one is present; however, this order may be reversed if an intonational break follows the definite accent, as shown in (57). This requirement for an intervening intonational break suggests to me that even where the DA precedes some post-nominal modifying material, it is probably at the right edge of DP and that the subsequent material is appositional to the DP, perhaps via right adjunction or right dislocation. I will set this problem aside for future research.⁵⁴

- (57) a. *'oku ma'a'a e sote na'a ku foó*
 PRES clean ABS SPEC **shirt** PAST **1EX.SG wash-DA**
 "The shirt that I washed is clean"
- b. *'oku ma'a'a e soté na'a ku foo*
 PRES clean ABS SPEC **shirt-DA** PAST **1EX.SG wash**
 "The shirt that I washed is clean."
 (Acceptable if an intonational break follows *soté*.)

(Ahn 2012:7)

⁵⁴Otsuka (p.c.) suggests that this could reflect a difference between restrictive and non-restrictive relative clauses.

In sum, there seems to be some variation in the precise positions of *-ni*, *-na*, and the definite accent relative to other post-nominal material, but it seems clear that the ordinary position of *-ni* and *-na* is closer to the head noun than that of the definite accent, falling either within or to the right edge of NP, and that the definite accent follows DP. Moreover, it is abundantly clear that the definite accent and other demonstrative clitics occupy or positions distinct from the articles *he*, *ha*, *si'i*, and *si'a*, which is taken here to be D^0 .

2.5.3. Determiners, demonstratives, and definiteness: Cross-linguistic observations

Cross-linguistically, demonstratives are strongly associated with both definiteness and determiners. Demonstratives and (other) determiners are normally in complementary distribution; in a survey of 85 languages, Rijkhoff (2002) finds that they co-occur only in six. Lyons (1999:107) proposes that demonstratives are “inherently definite,” and that for this reason they are normally in complementary distribution specifically with definite articles, and both likely occupy the same structural position, D^0 . Demonstratives, then, normally either replace a free-form definite article (as in English) or incorporate with it (this is one of two options in Māori).

Lyons (1999:118-120) points out, though, that there is a significant and heterogeneous group of languages in which demonstratives are not directly associated with definiteness and in which, therefore, demonstratives and definite articles co-occur. He divides these languages into two subgroups. In the first, the definite article occupies D^0 and a co-occurring demonstrative occupies another position either within or outside of DP. In the second, it is the definite article which occupies an NP-internal position (an affix or a phrasal clitic), and the demonstrative occupies D^0 . The non-D demonstratives in the first group may be affixes, clitics, or free morphemes. If free, they may be adjectival, as in Spanish, Catalan, and in the second of two Māori options; they may occupy another NP-internal position, as in Ewondo; or they may be NP-external, as in Irish (Lyons 1999:118-120).

Tongan, as shall be shown below, does not fit neatly into any of these patterns but rather exhibits a kind of mixed system. As discussed above, definiteness in Tongan is not marked in the determiner system. Rather, definiteness is expressed through a special demonstrative which marks discourse-anaphoric deixis. This demonstrative occupies an NP-external position similar to the demonstratives of Irish. Other demonstratives in Tongan, which mark spatial deixis, are NP-internal and resemble adjectives, as in the second Māori option. D⁰ in Tongan is not the locus of definiteness but it is consistently occupied by the (non-)specificity-marking articles *he* and *ha*.

In Lyons' (1999) second grouping of languages, described above, simple definite articles in D⁰ co-occur with demonstrative elements. There are also languages in which a demonstrative in D⁰ co-occurs with a second demonstrative element. These two types of co-occurrence are sometimes referred to together as demonstrative-reinforcer constructions and have been studied as such in Romance and Germanic (Giusti 1994, Bernstein 1997, Roehrs 2010) as well as Irish (McCloskey 2004, Panagiotidis 2000), Greek (Panagiotidis 2000) and Michif (Rosen 2003). These are illustrated in examples (58-60), below.

- (58) a. Yiddish:
der doziker guter man
this REINF good man
 'this good man'
- b. Afrikaans:
hier-die mooi meisie
here.this pretty girl
 'this pretty girl'
- c. German:
das schöne Bild **da**
that nice picture **there**
 'that nice picture'

- d. French:
ce livre rouge-ci (French)
this book red.**here**
 ‘this red book’
- e. Spanish:
el libro viejo este de aquí
the book old this **of here**
 ‘this old book’
- (Roehrs 2010: 226-227)
- (59) Michif:
- a. *awa la fij*
 DEM DET girl
 ‘that girl’
- b. *li fij smart okik*
 DET girl smart DEM
 ‘those smart girls (there)’
- (Rosen 2003:40)
- (60) a. Greek:
aftos o andras
this the man
 ‘this man’
- b. Irish:
an fear seo
the man **this**
 ‘this man’
- (Panagiotidis 2000:718)

Note that in most of the examples above, the determiner itself, as well as the reinforcer, contains a demonstrative. Those which resemble Tongan in that the determiner is a simple definite article, and the demonstrative element is separated from it by other elements, are significantly in the minority – Spanish (58e), one of two Michif options (59b), and Irish (60b). In these three constructions, as in Tongan, there is a dissociation between D⁰ and the locus of deixis. The Spanish example, however, differs from Tongan in another way: Its demonstrative element is embedded within a PP.

Again, as noted by Lyons (1999) and Rijkhoff (2002), this sort of structural dissociation of deixis from D⁰ is cross-linguistically unusual; however, it seems to be widespread among Polynesian and, more broadly, Oceanic languages. As described by Lyons (1999) (see above) and Bauer (1993), such a construction is one of two options for demonstrative expressions in Māori (61);⁵⁵ a similar option is available in Samoan (62) (Mosel 2004).⁵⁶

- (61) Māori:
ngaa pukapuka naa
the(pl) book PROXII
 ‘those books’ (near you)

(Bauer 1993:112)

- (62) Samoan:
le tama'ita'i nei
ART lady DEM
 ‘this lady’

(Mosel 2004:59)

Other Polynesian languages in which post-nominal demonstratives co-occur with pre-nominal articles include Tuvaluan (63) (Besnier 2000) and Pileni (a.k.a. Vaeakau-Taumako) (64) (Næss 2004).⁵⁷

⁵⁵The gloss PROXII in this datum is from Bauer (1993) and refers to a second-person proximal demonstrative.

⁵⁶In Samoan (Mosel 2004), as in Māori, demonstratives may occur pre-nominally, in which case they are combined with an article (*o*, plural or *le*, singular) or post-nominally, in which case the article remains in its basic form in pre-nominal position. In Samoan, a post-nominal demonstrative may be combined with another article – not necessarily the same one that precedes the noun. Thus “this child” may be expressed as *lenei tama*, *le tama nei*, or *le tama lenei* (Mosel 2004:155).

⁵⁷Other Polynesian languages have post-nominal demonstratives but either have post-nominal articles or lack them altogether. For example, Niuean has five demonstratives, all of which follow the head noun in a nominal expression (Seiter 1980:44-45). However, as Gorrie et al. (2010) point out, the language lacks a clear category that could be called determiners. Rather, the functions of determiners are fulfilled by case markers (argumenthood), number markers (referential potential), and Quantifiers (uniqueness, salience, new/old distinctions). Similarly Sye (Crowley 1998) has a series of demonstratives which may appear post-nominally, but the only clear determiner/article in that language is *hai*, which marks a nominal as non-specific, and this does not appear with demonstratives in any of his examples (unsurprising, given the relationship between

- (63) Tuvaluan:
te ttogi teenaa
 the price that
 ‘that price’

(Besnier 2000:147)

- (64) Pileni:
 a. *Te buka ne ni aku.*
 ART book DEM PP 1EX.POSS
 ‘The book is mine’
 b. *Te buka na ni au.*
 ART book DEM PP 2SG.POSS
 ‘The book is yours’⁵⁸

(Næss 2004:85)

This construction also occurs in the Central Pacific language Fijian (65) (Schütz 1985) and the Southern Oceanic language Mae (66) (Capell 1962).

- (65) Fijian:
na i-olo madrāi vaka-uto-na qō
 DEF parcel bread filled DEM:1⁵⁹
 ‘this sandwich’

(Schütz 1985:379)

- (66) Mae:
 a. *rau tama-ni*
 DEF.SG-POSS-2.SG child-DEM
 ‘this child of yours’

demonstratives, definiteness, and specificity). While it is plausible that Sye contains a null specific determiner, an exploration of this question is far beyond the scope of this dissertation.

⁵⁸ Although Næss (2004) glosses *te...ne* and *te...na* as ‘the,’ he analyzes both *ne* and *na* as demonstratives, and notes that sentences such as these are “clearly preferred” with the demonstratives over the same sentences without them (Næss 2004:85).

⁵⁹ The gloss DEM:1 is from Schütz and refers to the first-person demonstrative.

- b. *re kete-ni*
 DEF basket-DEM
 ‘this basket’

(adapted from Capell 1962:19)

Recall that in Tongan, while there is a dissociation between the demonstrative element and D^0 , there is nevertheless a dependency between them. Specifically, demonstratives (including the definite accent) only co-occur with the specific determiners *he* and *si'i*. Similar dependencies are found in other Oceanic languages as well. For instance, in Pileni (Næss 2004), Fijian (Schütz 1985), and Tuvaluan (Besnier 2000), a post-nominal demonstrative may only occur when the pre-nominal article is specific (in the case of Pileni) or definite (in the case of Fijian or Tuvaluan). Furthermore, as Schütz (1985:325) notes, the definite article is mandatory in Fijian whenever a demonstrative is present, even if the referent of the nominal expression is discourse-new, because the nominal expressions with demonstratives in that language must “refer to things metaphorically or physically at hand,” making them “immediately old information.”

Also not unique to Tongan is the dissociation of definiteness from D^0 . In both Rennellese (Elbert 1988) and Rotuman (den Dikken 2003), determiners appear at the left edge of nominal expressions, while definiteness is marked at the right edge. Definiteness in Rennellese is marked, as in Tongan, with a DP-final stress shift;⁶⁰ determiners simply mark (non-)specificity (Elbert 1988). In Rotuman, definiteness is marked not with a stress shift, but by the use of the so-called “complete phase” form of the final word within the nominal expression (which according to den Dikken (2003) is always either an adjective or a number marker). In the complete phase form, words contain an extra syllable which disappears elsewhere via metathesis, umlauting, diphthongization, or deletion.

In Samoan, although definiteness is normally marked by a (pre-nominal) article, there is a construction where it is marked on the right instead. In this construction, a “locative accent”

⁶⁰Elbert (1988), borrowing the term from Churchward (1953), calls this phenomenon the “definitive accent,” and likens it to the Tongan DA.

encodes definiteness by lengthening the final vowel of a noun (Condux 1990). Unlike the phrase-final definiteness markers in Tongan, Rennellese, and Rotuman, however, the Samoan locative accent is limited to nouns which denote locations “at a distance” (Condux 1990, citing others).

It should be noted that Oceanic – and even Polynesian – languages exhibit a significant amount of diversity in their demonstrative paradigms, in the syntax of their demonstratives, and in the relationships between demonstratives and determiners. Ross (2004), approaching the diversity of Oceanic demonstratives from a diachronic perspective, proposes that this can be traced back to the breakup of the proto-Malayo-Polynesian (PMP) speech community. PMP had separate paradigms of pre-nominal demonstrative determiners and nominal demonstrative bases, but this distinction was lost when the speech community broke up, leaving Proto-Oceanic with a mixed demonstrative paradigm in which some members were pre-nominal determiners and others were nominal demonstratives (Ross 2004:178). The latter could also function adnominally and, when doing so, most likely followed the head noun (Ross 2004:179).

Ross (2004) also notes that the demonstrative paradigms of PMP and proto-Oceanic seem to have been person-based, with an additional member⁶¹ reserved for discourse-anaphoric use. In some modern Oceanic languages, a reflex of the anaphoric form remains, while in others, it has been lost and the next least-marked demonstrative has “lost its deictic function and is only used anaphorically” (Ross 2004:177). In the introduction to the same volume, Senft (2004:2) defines anaphoric deixis as referring “to a referent or segment mentioned earlier in an utterance, discourse, or text.” This is consistent with Churchward’s (1953) and Clark’s (1974) description of the definite accent as having a kind of unspecified deictic function which can be interpreted figuratively, as pointing to something in the foregoing discourse rather than in the physical environment (“what I (the speaker) am pointing to, whether

⁶¹Ross (2004) refers to the anaphoric member of the proto-Oceanic paradigm as both the fourth member (“there is some evidence that proto-Oceanic may have had an anaphoric fourth member,” p. 177) and, after positing a different fourth member for distant or invisible referents, as the fifth (“There was also perhaps a fifth, anaphoric, member,” p. 182)).

actually or only in imagination,” (Churchward 1953:151, cited in Clark 1974:104)). Clark interprets this description as meaning that the definite accent is a “purely referential marker of definiteness” (Clark 1974:107). It is also consistent with their claim that the definite accent is historically and paradigmatically related to the (other) demonstrative clitics, having undergone semantic bleaching. Although it is not an article, its function as a definiteness marker is also consistent with Lyons’ (1999:107) statement that “definite articles almost always arise from [demonstratives] historically, presumably by some process of semantic weakening.”

2.5.4. Syntax of the definite accent

Again, it is abundantly clear that the Tongan definite accent is not a member of the same paradigm as the articles *he*, *ha*, *si’i*, and *si’a*. It is not in complementary distribution with them but seems to select a subset of them, and it occupies a very different linear position from them. The category of the articles is taken to be D^0 not only because it is the locus of specificity (which, arguably, could be somewhere below D^0), but also because it is the minimal category required for a nominal expression to be an argument. Thus, definiteness in Tongan is not marked in D^0 but, rather, by the anaphoric (discourse-deictic) use of a demonstrative particle, the definite accent. Yet this position is also distinct from that of the spatial demonstrative particles, suggesting that while they may historically have been taxonomic sisters, the grammaticalization of the third-person demonstrative particle as a marker of discourse, rather than spatial, deixis has also yielded a change in its merge position.

I propose that the definite accent occupies a head position above D^0 . Because of its paradigmatic and historical association with the demonstrative paradigm and because its meaning is consistent with anaphoric deixis, I label this head $\text{Dem}_{\text{ANA}}^0$ (this distinguishes it from the NP-internal demonstratives which indicate proximity to speaker and hearer. I propose that these are spatial demonstratives – Dem_{SP}^0). The DA selects as its complement a

DP with the feature [SPECIFIC] in D^0 . This DP moves from [Comp, Dem_{ANA}^0] to [Spec, Dem_{ANA}^0]. This movement strands the definite accent to the right of DP, yielding its right-peripheral surface position and the apparent long-distance relation between the definite accent and the determiner it selects.⁶² This proposal is illustrated in a phrase-structure diagram at the end of this subsection.

Dem_{ANA}^0 and Dem_{SP}^0 are distinguished morphologically and semantically by the presence of person features on the latter; these person features yield the “near speaker” and “near addressee” meanings of the clitics *-ni* and *-na*. Syntactically, they are distinguished by their merge positions: Whereas Dem_{ANA}^0 is merged in the left periphery of the nominal phrase, thereby becoming the head of the phrase, Dem_{SP}^0 is a modifier merged within NP.

Treating the DA as the spellout of a demonstrative head obviates the need for a feature [DEFINITE]. As shown above, the demonstrative accent in Tongan is the least contentful, semantically, of the demonstrative clitics (Clark 1974 describes it as “semantically bleached”). Historically, as a member of the same paradigm as *-ni* and *-na*, it would have corresponded to the third person, where *-ni* ‘near me’ is a first-person demonstrative and *-na* ‘near you’ is a second-person demonstrative. Assuming a system of radical underspecification and monovalent features as adopted by Cowper and Hall (2002), whereby the most unmarked member of a syntactic category is that which spells out a bare head (*i.e.* one which does not host morphosyntactic features), this precursor to the definite accent would have contained a bare person node (π) as part of its morphosyntactic structure.⁶³ In the process of being grammaticalized as a marker of purely anaphoric deixis, however, it lost its π node altogether. Thus, whereas languages such as English possess a [DEFINITENESS] feature which is dependent on D^0 (Cowper & Hall 2002), Tongan does not. In this language,

⁶²As noted above, for some speakers, the definite accent may be followed by a relative clause (Ahn 2012). In these cases, I assume that the relative clause has been right-adjoined to DemP.

⁶³In the geometry of π -features adopted here, discussed in some detail below and again in Chapter 3, the third person is morphosyntactically unmarked, an assumption which is relatively uncontroversial (see, *e.g.* Harley 1994, Harley & Ritter 2002, Cowper & Hall 2002, and McGinnis 2005).

definiteness is simply the interpretation of deixis without locative specification, *i.e.* a demonstrative without π .⁶⁴

Despite the non-existence of a [DEFINITE] feature in Tongan, however, the relation of dependency between definiteness and specificity observed in other languages is also seen here and is preserved in this analysis. In English, the dependency results from the hierarchy of the features [DEFINITE] and [SPECIFIC] under D^0 (Cowper & Hall 2002, 2012). In Tongan, it results from a syntactic relation between D^0 and Dem_{ANA}^0 . Dem_{ANA}^0 , which is definite by interpretation, selects as its complement a DP with the feature [SPECIFIC] at its left edge – *i.e.* a DP headed by *he* or *si'i*.

Treating Dem^0 as occupying a position above DP is perhaps not an uncontroversial choice, but there are precedents for doing so. Rijkhoff (2002) and Svenonius (2008) both propose Dem^0 above D^0 , following Greenberg's (1963) claim regarding the universal ordering of demonstratives, numerals, and adjectives. Greenberg's Universal 20 states:

“When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.”

(Greenberg 1963:87)

From this, Svenonius (2008) draws the inference that demonstratives are merged higher than numerals, which in turn are higher than adjectives. However, because of the relatively small number of languages in which determiners and demonstratives co-occur, little has been said about the relative positions of these two elements. Svenonius (2008) argues, on the basis of the six exceptional languages identified by Rijkhoff (2002), that demonstratives are, in fact, higher than determiners within the noun phrase. Specifically, he proposes (Svenonius

⁶⁴Interestingly, the dissociation of spatial from anaphoric deixis seems to be more than just a matter of merge position. As discussed in section 2.5.5, below, the presence of a spatial demonstrative in Tongan neither entails nor contraindicates the presence of the definite accent. Moreover, shared knowledge is neither necessary nor sufficient for felicitous use of a spatial demonstrative (spatial demonstratives in Tongan do not have a discourse-anaphoric function like those of English, and their felicitous use does not require them to be known to the hearer).

2008:26) that the hierarchy in (67) is universal, and that it can be reordered through the movement of the [Art-N] sequence to the left of the demonstrative.

- (67) Svenonius' (2008) hierarchy of left-peripheral DP elements
 Dem > Art[icle] > Num[eral] > Pl[ural] > Adj > N

Similarly, McCloskey (2004) proposes that the Det-N-Dem ordering seen in Irish (as in example 57b, above), is derived by merger of DP as the complement of Dem^0 and the subsequent movement of DP from [Comp, Dem^0] to [Spec, DemP]. This is essentially what I propose for the definite accent in Tongan.⁶⁵

In contrast to this, in much recent work on demonstratives (e.g. Giusti 1994, Bernstein 1997, Brugè 2002, Roehrs 2010, Panagiotidis 2000, Rosen 2003), it is held that demonstratives are merged low, either within or at the right edge of NP. The generation of a pre-nominal demonstrative is thought to arise from the movement of a deictic morpheme, feature, or operator from the NP-internal position to D^0 or [Spec, DP]. Brugè proposes that the movement of the demonstrative to D^0 may be covert, in which case it establishes the requisite relationship with D^0 but is spelled out at the right edge of DP. It seems unlikely, however, that such an analysis would properly account for the fact that the Tongan definite accent is spelled out in a position that is to the right edge even of relative clauses and possessors. It would also require a very long-distance movement past potential interveners (such as determiners within possessors and relative clauses). Svenonius (2008) acknowledges Brugè's (2002) analysis but discounts it on the grounds that it is inconsistent with Greenberg's generalization 20. Likewise, I set aside such analyses in favour of one in which Dem_{ANA}^0 , a separate head above D^0 , is the locus of the definite accent.

⁶⁵In treating demonstratives as heads rather than as phrases, I am differing from the convention of treating them as phrasal modifiers of NP in a specifier position. However, it has been noted (e.g. Svenonius 2008) that even if demonstratives are phrasal modifiers of NP, they have head-like characteristics. Svenonius (2008: 26) suggests that they may be merged as phrases and then be recategorized as heads, although he does not propose a means by which this would occur. Evidence for treating them as heads in Tongan comes from the fact that, like the universal quantifier *kotoa* and unlike post-nominal, phrasal modifiers (adjective phrases, relative clauses, possessors, and numerals), they are resistant to scrambling.

To elaborate on the above, I present below my proposals for the feature geometries of determiners and demonstratives in Tongan and for the movement by which DP surfaces left of the definite accent in Dem^0 . Following this, I return to the problem of the DP-internal spellout position of *-ni* and *-na*.

My approach to morphosyntactic feature geometries is based largely on work by Cowper and Hall (2002, 2005, 2012a). Adopting a system of monovalent, contrastively specified features, they argue (Cowper & Hall 2002) for a universal hierarchy of features encoding definiteness and specificity, in which the first dependent of D^0 is [SPECIFIC], and its marked dependent is [DEFINITE]. This generates a three-way distinction between a bare D^0 (nonspecific and indefinite); [SPECIFIC] alone (specific but indefinite); and [SPECIFIC, DEFINITE], and it captures the fact that definiteness logically entails specificity.

In terms of how these features are spelled out, Cowper and Hall (2002, 2012a) propose that English *a* is underspecified for specificity, spelling out bare D^0 . Cowper and Hall (2012a) further distinguish between *a*, which is singular and countable, and \emptyset /*some* which are non-countable (these, they propose, spell out a feature [NON-ATOMIC]).⁶⁶ They also propose (2000, 2012) that unstressed *this* is indefinite and specific, spelling out [SPECIFIC]; and *the* is specific and definite, spelling out [DEFINITE]. Since unstressed *this* is associated with casual register in English and “stylistically limited” (Lyons 1999:176), I propose that D^0 without [DEFINITE] is spelled out as *a* (with singular nominals), unstressed *this*, or unstressed *some*, regardless of the presence of [SPECIFIC], yielding the specific/nonspecific syncretism observed by Hendrick (2005) and described above. This is outlined in Table 5, below.

⁶⁶Cowper and Hall (2012a) differ from Cowper and Hall (2002) in their treatment of how English determiners encode mass/countability and number, and in accounting for both singular/mass and mass/plural syncretisms. According to their analysis, a head, NAT^0 , between D^0 and NP, hosts the feature [NON-ATOMIC] and its dependent, [DISCRETE]. D^0 inherits [NON-ATOMIC] and [DISCRETE], if present, from NAT^0 . As Tongan determiners do not encode either mass/countability or number, I do not explore this analysis here.

TABLE 5: FEATURE GEOMETRIES OF ENGLISH D⁰

non-specific	specific	definite
D	D [SPECIFIC]	D [SPECIFIC] [DEFINITE]
<i>a, some</i>	<i>this,⁶⁷ a, some</i>	<i>the</i>

Adopting this system of monovalent, contrastively specified, and hierarchically organized morphosyntactic features, I propose that the Tongan D⁰ has two possible dependent features, [SPECIFIC] and [DIMINUTIVE]. Since there is no entailment relation between specificity and diminutiveness in Tongan, these features are sisters, independent of one another. A bare D⁰ in Tongan is thus spelled out as *ha*; a D⁰ with the single feature [SPECIFIC] is spelled out as *he*; one with the single feature [DIMINUTIVE] is spelled out as *si'a*; and one with the features [SPECIFIC] and [DIMINUTIVE] is spelled out as *si'i*.⁶⁸ This proposal is represented schematically with the feature diagrams in Table 6, below.

⁶⁷ *This* here is the unstressed determiner *this* which is described by Lyons (1999:176) as a “purely optional alternative to *a* [...] typically used when the referent is going to be talked about further.” Lyons (1999:177) treats it as a type of “definite article with peculiar semantics,” although he notes its particular similarity to the “Austronesian [...] article which combines definiteness with specific indefiniteness.”

⁶⁸ Cowper (P.C.) has suggested that diminutiveness may be associated with a separate head (e.g. Dim⁰), immediately dominated by D⁰. For the purpose of the present discussion, there is no clear reason to distinguish between the two analyses (a strict adherence to the LCA right down to the level of morphology would motivate adoption of Cowper’s (P.C.) proposal, but the astute reader will have already noted that I am not strictly adhering to the LCA even in syntax). For ease of representation (and to reflect the morphological integration of diminutivity with determiners), I am treating [DIMINUTIVE] as a direct dependent of D⁰. Further research may suggest an empirical motivation to sever them.

TABLE 6: FEATURE GEOMETRIES OF TONGAN D^0

	non-specific	specific
neutral	D <i>ha</i>	D SPECIFIC <i>he</i>
emotional	D DIMINUTIVE <i>si'a</i>	D / \ SPECIFIC DIMINUTIVE <i>si'i</i>

I turn now to the feature geometry of demonstratives in Tongan. As analyzed by Clark (1974), there are three demonstrative persons in Tongan. According to the present analysis, only two of these are realized as spatial demonstrative clitics in Dem_{sp}^0 . The clitics *-ni* and *-na*, and the corresponding pronouns *(h)ene* and *(h)ena* and adverbs *peheni* and *pehena* are associated with the first and second persons, meaning ‘near me’ and ‘near you,’ respectively (Churchward 1953, Clark 1974). The third-person locative pronoun *(h)ē* and adverb *pehē* are associated with an unspecified location. Thus, whereas the locative information in English demonstratives relates to proximity – and thus is morphosyntactically encoded by the presence or absence of the feature [DISTAL] (Cowper & Hall, 2002) – the locative information in Tongan demonstratives relates to person. Instead of a feature [DISTAL], therefore, Tongan demonstratives possess person (π) features. In pronouns, π is generally dependent on φ (Déchaine & Wiltschko 2002, Cowper & Hall 2005, Béjar 2003), but in Tongan demonstratives I propose that it is directly dependent on Dem^0 .

Although Tongan has a four-person pronominal system, only three persons are represented in the demonstrative paradigm. The contrast between inclusive and exclusive first persons – the most marked contrast in the person paradigm, and active throughout the pronominal system of Tongan – is absent. Below, I show how the geometry of π -features I have adopted for the

four-person pronominal system of Tongan (Macdonald 2006a, to appear) can, with the omission of the most-marked feature, generate the three-person demonstrative paradigm. Following this, I return to the problem of selection and apparent non-adjacency.

There are various proposals for the representation of a four-way distinction among persons in a hierarchical feature system. In Macdonald (2006), I explore four of these – Harley (1994), Harley and Ritter (2002), McGinnis (2005), and Cowper and Hall (2002) – and I propose a variant of Harley (1994) to account for Tongan, shown in Table 7, below. The same system, less the most marked feature, [ADDRESSEE], (and hence the most marked person, first exclusive), generates a three-way person distinction, as found in the demonstrative paradigm. I am thus proposing that the definite accent, *i.e.* a null mora, is the spellout of a demonstrative head with no π node, merged in $\text{Dem}_{\text{ANA}}^0$; that the clitic *-ni* ‘near me’ spells out Dem^0 with a single feature, [PARTICIPANT], interpreted by default as referring to the addressee; and that the clitic *-na* ‘near you’ spells out an additional feature [SPEAKER], which is dependent on [PARTICIPANT].⁶⁹ The feature [ADDRESSEE], which distinguishes 1st-person exclusive from 1st-person inclusive is available elsewhere in Tongan (*i.e.* the pronominal system) but is absent among the features of Dem^0 . This proposal is depicted in Table 7.

⁶⁹This proposal presents a puzzle: The other demonstrative paradigms in Tongan all possess a member with a bare π node as well as two in which π has one or more dependent features; however, although the third-person demonstrative clitic paradigm contains two members in which π has one or more dependents, it lacks a member in which π is present but underspecified. This raises the question of what happens if Dem_{SP} is merged with such a configuration. Is it spelled out according to “best match” as a DA in the NP-internal Dem_{SP} position, or as *-ni*, or does the derivation crash?

TABLE 7: Π -FEATURE GEOMETRIES OF SPATIAL DEMONSTRATIVES IN TONGAN⁷⁰

3 'definite'	1 Exclusive 'here; near me'	2 'there; near you'	1 Inclusive
DA	PARTICIPANT <i>-ni</i>	PARTICIPANT SPEAKER <i>-na</i>	PARTICIPANT SPEAKER ADDRESSEE

Arguably, it is this person-based deictic system that allows Tongan to have a bare demonstrative head that simply encodes definiteness

Returning to the relation of definiteness to specificity, I propose that selection is the mechanism by which the cross-linguistic dependency of the former on the latter is realized in Tongan. The definite accent, merged as a demonstrative head above D^0 , selects as its complement a DP whose head bears the feature [SPECIFIC]. Recall that in example (51), repeated here as (68), it was shown that the definite accent occurs at the right edge of DP even when the DP contains a relative clause or other complex constituents. This is because the DP moves leftward from [Comp, Dem_{ANA}⁰] to [Spec, Dem_{ANA} P], leaving the demonstrative clitic stranded at the right edge of the nominal expression.

- (68) a. *'oku mahino 'a e me'á*
 PRES clear ABS SPEC **thing-DA**
 'The thing is clear.'
- b. *'oku mahino 'a e me'a kuo hokó*
 PRES clear ABS SPEC thing PERF **happen-DA**
 'The thing which has happened is clear.'

⁷⁰The feature geometry of person in Tongan is considered in more detail in section 3.3.

- c. *'oku mahino 'a e me'a na'a nau fai*
 PRES clear ABS SPEC thing PAST 3.PL **do-D.A.**
 'The thing which they did is clear.'
- d. *'oku mahino 'a e me'a na'a nau fai 'aneafi*
 PRES clear ABS SPEC thing PAST 3.PL do **yesterday-DA**
 'The thing which they did yesterday is clear.'

(adapted from Churchward 1953:7-8)

While it is tempting to propose that the encliticization of the demonstrative to the right edge of DP is the driver of this comp-to-spec movement (Herd, p.c.), there is no independent evidence that such is the case in Tongan. A similar movement within DP, the movement of $\text{Dem}_{\text{ANA}}\text{P}$ from [Comp, Q^0] to [Spec, QP] is not associated with cliticization. Moreover, both encliticization and procliticization occur frequently in Tongan as purely phonological processes by which subminimal lexemes are attached to one another or to larger lexemes to form phonological words (a minimum phonological word in Tongan being a moraic trochee) (Anderson & Otsuka 2006, Macdonald 2007).⁷¹ Thus, the leftward movement of DP here appears to be syntactic, and the phonological encliticization of the definite accent appears to be incidental.

Iterative comp-to-spec movements such as this, also called *roll-up* or *snowballing*, are seen elsewhere in Austronesian languages. Kahnemuyipour and Massam (2006) have observed several comp-to-spec movements within the Niuean DP. There, the Adjective Phrase (AP) moves from [Comp, Dem^0] to [Spec, DemP] and #P moves from [Comp, A^0] to [Spec, AP]. These two movements result in a surface order in which adjectives are post-nominal (and inversely ordered, relative to Cinque's (2005) universal ordering of adjectives) and demonstratives are yet further to the right.^{72 73}

⁷¹Anderson and Otsuka (2006) note that cliticization of monomoraic particles can occur leftward or rightward. However, certain phrase boundaries seem to block rightward cliticization; one of these is the right edge of DP. This may be evidence for the phasehood of DPs in Tongan.

⁷²They further observe movements of or from PossP to [Spec, DP]. Specifically, if Poss^0 contains the possessive marker *a*, PossP moves from [Comp, D^0] to [Spec, DP], and the possessor surfaces pre-nominally. If Poss^0 is empty, DemP is extracted from [Comp, Poss^0] and moves to [Spec, DP], and the possessor surfaces

More broadly, Svenonius (2008) argues for successive phrasal comp-to-spec movements within DPs cross-linguistically, proposing that such movements applied to a universal DP structure can account for variation in intra-DP word order. For example, he proposes that in Norwegian, *UNITP* moves from complementizer to specifier within *ArtP*, and *nP* does the same within *PI[ural]P* (Svenonius 2008:28); in Malay, Hmong, and Vietnamese, *UNITP* moves from complementizer to specifier within *DemP*, *nP* does so within *SortP*, and *NP* does so within *nP* (pp. 30-32).

Elsewhere in Austronesian, such comp-to-spec movements have been observed outside the DP. Rackowski and Travis (2000) describe a series of such movements within TP, in which projections (the lowest being VP) successively move from Comp to Spec, causing a reversal of the order of elements. The consequence of this is a sequence of post-verbal adverbs which merge above V but surface to its right, in an order which mirrors Cinque's (1999) proposed universal order of adverbs. Massam (2010) shows that roll-up movements below T^0 can account for the fact that the order of adverbs in Niuean is inverted relative to Cinque's (1999) observed universal order.

Beyond Austronesian, similar movements have been proposed by Koopman and Szabolcsi (2000), Munaro and Poletto (2003), and McCloskey (2004) to account for word order in German, Veneto Italian, and Irish, respectively. Specifically, Koopman and Szabolcsi (2000) propose that there is a projection, *VP+*, immediately dominating VP, dedicated to complex-verb formation. Main verbs and verbal particles undergo remnant movement from the complement of V^0 to the specifier position of *VP+*, yielding their surface position to the left of the main verb.⁷⁴ Munaro and Poletto (2003) examine the sentence-final position of certain

post-nominally (Kahnemuyipour & Massam 2006:137). This is shown to support Rackowski and Travis's (2000) claim that non-contentful phrases cannot move.

⁷³In Niuean, D^0 seems to be merged higher than Dem^0 and surface lower.

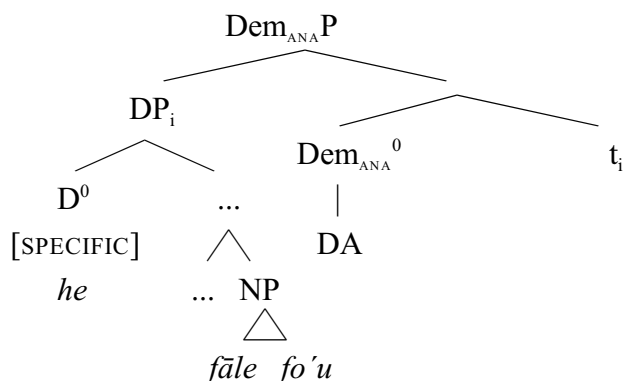
⁷⁴Koopman and Szabolcsi (2000) note that the existence of *VP+* is motivated, in part, by the modified LCA (doubly-filled comp filter), which states that no overt material can be present in the head and specifier positions of the same projection. I do not adhere to the LCA; thus, my account allows direct movement of material from the complement to the specifier of the same projection. I do not consider the presence or absence of an intervening projection to be a crucial difference between their approach and my own.

sentential particles in certain Veneto dialects of Italian and propose that these particles are heads within the CP layer, and that their clausal complement moves from [Comp, F⁰] (where F⁰ is one of the particles under consideration) to [Spec, FP]. McCloskey (2004) suggests that phrase-final demonstratives in Irish are likely generated in essentially the same manner as I propose for definite accent; that is, he proposes that Irish demonstratives are merged high, taking a DP as their complement, and that this DP moves from [Comp, Dem⁰] to [Spec, DemP], stranding the demonstrative in the right periphery.

The proposed movement of DP from [Comp, Dem⁰] to [Spec, DemP] in Tongan accounts for what appears to be a long-distance relation in a very straightforward manner: At merge, Dem_{ANA}⁰ and D⁰ are adjacent, and the relation between them is simply one of selection. This means that the cross-linguistic dependency of definiteness on specificity is observed in Tongan despite the fact that they are associated with two different heads. The phrase structure diagram in Figure 4, below, illustrates my proposal for the merge and spellout positions of the definite accent relative to other elements within the nominal phrase. In this tree, <...> represents the series of (in this instance) empty heads that intervene between D⁰ and NP, namely #⁰, Asp⁰, and *n*⁰ (these positions and the elements which occupy them will be presented in subsequent chapters).

FIGURE 4: MERGE AND SPELLOUT POSITIONS OF THE DEFINITE ACCENT

he fāle fo'ú
 SPEC house new-DA
 “The new house.”



2.5.5. Syntax of the spatial demonstrative clitics *-ni* and *-na*

While the above analysis accounts for the fact that definiteness (anaphoric deixis) is dependent on specificity, it does not predict that spatial deixis will be dependent on either definiteness or specificity. The facts of Tongan are partially consistent with these predictions: Spatial deixis seems to be independent of definiteness but dependent on specificity. That is, the presence of *-ni* and *-na* within NP requires the presence of a feature [SPECIFIC] on D^0 (spelled out as the specific determiner *he* or a compositional determiner which contains *he*), but these particles can appear with or without the definite accent (Ahn 2012). I will elaborate on this latter fact before returning to the problem of the observed dependency between spatial deixis and specificity.

Similar to the analysis developed here, Ahn (2012) proposes that the definite accent is not synchronically associated with *-ni* and *-na* at all. He proposes a tripartite structure for the left periphery of DPs, with demonstrative clitics, determiners, and the definite accent all occupying different heads, which he calls Dem^0 , Low- D^0 , and High- D^0 , respectively. Unlike the present analysis, he adopts a strictly antisymmetric approach to linearization, with the following hierarchy of heads within the expanded D^0 : High D^0 (*he, ha*) >> Dem^0 (*-ni, -na*) >>

Low D^0 (DA) (Ahn 2012:5). Thus, the most significant difference between his analysis and that presented here is that, for him, the spell-out order of these elements reflects their structural positions – the head nominal and its modifiers are generated in the complement of Low D and move to various specifier positions before spellout. As argued above, I treat Dem_{ANA}^0 (which corresponds to his low- D^0) as higher than D^0 (his high- D^0) both because of the implicational relationships between them (the presence of Dem_{ANA}^0 implies that of [SPECIFIC], a dependent of D^0 , suggesting that Dem^0 selects DP as its complement) and as a consequence of the roll-up analysis of linearization within the Tongan DP.

The common thread between the two analyses, however, is the dissociation of definiteness from spatial deixis. Both predict that the presence or absence of the definite accent should be independent of the presence or absence of *-ni* or *-na*. In fact, Ahn (2012:3) presents evidence that this is the case, arguing that the ability of the definite accent and *-ni* or *-na* to co-occur is evidence that they instantiate different heads. The relevant datum is given in example (69). For clarity, I employ Ahn’s notation in this example, so the DA is represented with both with the acute accent <’> denoting the locus of stress and a second copy of the stressed vowel, denoting the extra mora that triggers the stress shift. According to Ahn (2012:3), the DA must appear to the right of the spatial demonstrative clitic (here, *-ni*); the reverse ordering, in (69b), is ungrammatical. This is predicted by both Ahn’s (2012) analysis (in which the DA is merged as the complement of the spatial demonstrative) and my own (in which the spatial demonstrative is generated NP-internally, and the DA is merged higher than DP but appears at the right edge due to the leftward movement of its complement).

- (69) a. *he fale fo’u -ni-i*
 SPEC house new **-loc-DA**
 “**This** new house.”

- b. **he fale fo'ú-u -ni*
 SPEC house new-DA loc

(adapted from Ahn 2012:3)⁷⁵

This leaves open the question of how to account for the fact that such independence is not observed between the particles *-ni* and *-na* and the presence of [SPECIFIC] in D⁰. As noted by Churchward (1953:152), the presence of *-ni* or *-na* within NP entails that of *he*, a possessive pronoun, or a place name. Thus, while these demonstratives neither encode definiteness (as they can occur with the definite accent) nor exert selection over D⁰ (as they are merged low, within NP), they exhibit a dependency with the feature [SPECIFIC] that is unaccounted for here. The solution to this may be syntactic, or it may simply be one of pragmatic felicity.

In support of the latter possibility, I note that LMK considers the use of *-ni* or *-na* to be infelicitous when the referent of the nominal expression is not visible to the speaker (an exception being a telephone conversation in which the referent is visible to the hearer, and the speaker knows this to be the case; in such a situation, *-na* ‘near you’ would be felicitous). The referent need not have been mentioned in the discourse, however, and having been mentioned in the discourse is not sufficient for the felicitous use of *-ni* or *-na* (in other words, spatial and anaphoric deixis, in Tongan, are independent of one another). Felicitous use of spatial deixis, in Tongan, depends on specificity, as the ability of the speaker to see the referent or know that the hearer can see it implies that he or she has a particular referent in mind, but it has no such dependence on definiteness.

There may also be a simple syntactic solution to the problem. Recall that the spatial demonstrative particles are immediately to the right of N⁰ or NP. Thus, they are structurally local to, and c-commanded by D⁰. It is plausible that these particles are merged with an

⁷⁵If the spatial demonstrative clitic *-ni* were to occur here without the definite accent, which is allowable according to both Ahn’s (2012) analysis and my own, the resulting phrase would be *he fale fo'ú-ni*. That is, the presence of the clitic *-ni* would trigger the stress shift in *fo'ú* (“new”) from the penultimate to the final vowel, without lengthening the latter. The phonetic difference between *he fale fo'ú-ni* (without the definite accent) and *he fale fo'ú-u-ni* (with it) is thus very subtle. Moreover, as the DA is not normally expressed orthographically (FN:LMK), it would not be verifiable through texts.

uninterpretable [SPECIFIC] feature which, having probed its complement and found no available goal, probes upward to find one in D^0 (I am assuming cyclic Agree as proposed by Béjar and Rezac (2009)). If D^0 contains the feature [SPECIFIC], the derivation succeeds. If not, it crashes. Under the present analysis, however, this derivation is only local when no possessor is present in the nominal expression. Otherwise, a possessor with the feature [SPECIFIC] in its D^0 would be an intervener, blocking an Agree relation between the possessum NP (marked by *-ni* or *-na*) and the higher D^0 .⁷⁶ The analysis I am tentatively proposing here only holds, therefore, if the spatial demonstratives cannot appear in a DP with a possessor. It is unclear to me whether this is the case, and I set aside this empirical question for future research.⁷⁷

An alternative syntactic solution is suggested by Bernstein's (1997) treatment of demonstratives. She proposes that demonstratives are merged within NP and move to D^0 . She observes that in French and English, where these demonstratives are interpreted deictically, they are incompatible with a restrictive relative clause; where they are interpreted as specific indefinites, no such incompatibility arises. Adopting Kayne's (1994) treatment of relative clauses, in which they are CP complements of D^0 , she proposes that deictic demonstratives (which are merged NP-internally) contain an inherent [+DEFINITE] feature, which is incompatible with a strong [-DEFINITE] feature on the relative C^0 (definite articles, on the other hand, are merged directly in D^0 , outside the domain of C^0 , and thus no such clash arises). I do not undertake an analysis of relative clauses in Tongan here (the curious reader is directed to Otsuka 2006 and Ahn 2012), and I remain agnostic about Kayne's (1994) proposal for relative-clause structure. However, an analysis along Bernstein's (1997) lines might account for both the incompatibility of *-ni* and *-na* with relative clauses and the

⁷⁶As outlined in Chapter 1 and elaborated upon in Chapter 3, a possessor DP is merged in [Spec, nP], and the possessum is merged as the complement of [Spec, n^0].

⁷⁷LMK often rejects but sometimes accepts such phrases. She does not seem to spontaneously generate them; even when prompted to repeat one after accepting it, she often omits either the possessor or the demonstrative. Otsuka (p.c.) notes that to her, *'eku tohi-ni*, which contains a possessive pronoun (*'eku* 'my'), and spatial demonstrative clitic (*-ni* 'near me') sounds grammatical. If, in fact, possessive pronouns and spatial demonstrative clitics can co-occur, this will mandate refinement of my analysis. I set this empirical question and its implications aside for future research.

requirement that they co-occur with a [SPECIFIC] determiner, if *-ni* and *-na* have an inherent [DEFINITE] feature. The definite accent has no such feature, although it is inherently definite due to its anaphoric meaning; however, it is merged in a position higher than DP and hence, perhaps, outside of the domain of C^0 .

I am also setting aside the question of the precise merge location of the spatial deictic clitics in Tongan. It is clear that they are merged relatively low in the nominal expression, either within or at the right edge of NP, but not in the right periphery of DP (numerals and other elements follow them). Because they are clitics, it seems likely that they undergo some local movement at PF. For now, I assume that they are merged amongst the post-nominal modifiers, such as adjectives.

2.5.6. A wrinkle: Nonspecific definite DPs

My analysis of the Tongan definite accent suggests that it should never occur in a nominal phrase which begins with *ha* or *si'a*. This is generally true, but Churchward (1953:270-271) notes a class of exceptions, in which the non-specific DP contains the emphatic particle *pē* ('only, precisely'). His examples are given below, (70)

- (70) a. *'Omai pē ha me'a te ke loto ki aí.*
 bring EMPH NONSPEC **thing** SBJV 2.SG want DAT **there-DA**
 'Bring whatever you like.'
- b. *'Oku ma loto ke ke fai ma'amaua ha me'a pē te*
 PRES 1EX.PL want COMP 2.SG do BEN-1.PL NONSPEC **thing** EMPH SBJV
ma kole atú.
1EX.PL request henceforward-DA
 'We desire that you do for us whatever we may request.'

- c. *Te u fiemālie pē au ki ha taimi pē 'e*
 SBJV 1EX.SG content EMPH 1EX.SG DAT NONSPEC time EMPH SBJV
faingamālie kiate koé.
convenient DAT 2.SG-DA
 ‘I will be content only with a time that is convenient to you.’
 (adapted from Churchward 1953:270)

Two observations can be made about these examples. First, as Churchward (1953) notes, while the NPs in question here are headed by the nonspecific determiner *ha*, they include the emphatic *pē*, whose meaning (‘only, precisely’) conveys specificity. It is thus possible that the presence of *pē* is sufficient to satisfy the selectional requirements of $\text{Dem}_{\text{ANA}}^0$. Secondly, in each of these examples, the definite accent occurs at the right edge of a relative clause, the head of which is marked as nonspecific in the matrix clause (in each of these three cases, the nonspecific determiner seems to roughly convey a sense of ‘whatever;’ hence, these are free relative clauses).

In order to elaborate on the structures of the sentences in (70), it is helpful to provide some background on Tongan relative clauses. Tongan allows relativization of A (ergative external), S (absolutive external), and O (absolutive internal) arguments, as well as of oblique patients, goals, locatives, and other dative-marked nominals. Relativized ergative (A) arguments and oblique DPs must be realized with a resumptive pronoun. Among relativized absolutive arguments, O is always realized by a gap, whereas S must be realized by a gap when it is third-person singular but may be realized by either a gap or a resumptive pronoun otherwise (Chung 1978:38-44, Otsuka 2000:116-117).⁷⁸

In (70a), the head of the relative clause, *me'a* (‘thing’) is co-indexed with the oblique theme of the intransitive verb *loto* ‘want;’ it is realized with the dative phrase *ki ai* (‘to it’), in which

⁷⁸Further complicating the picture, resumptive pronouns must be clitics where possible (Chung 1978:42-43). Thus, relativized A and pronominal (non-third-singular) S are “subject” clitics which are hosted in Fin^0 enclitic on the Tense-Aspect-Mood (TAM) particle, whereas relativized oblique arguments preceded by the prepositions *'i* and *ki* are enclitic on P^0 , and obliques, preceded by *mo* ‘with,’ are realized as full (*i.e.* strong) pronouns. For further discussion of the TAM clitics, see the discussion of pronouns in Chapter 3.

ai is a clitic form of the third-singular pronoun *ia*.⁷⁹ The heads of the relatives in (70b) *me'a* ‘thing’ and (70c) *taimi* ‘time’ are absolutive arguments, O and S respectively. The sentences are repeated in (71) with indices and gaps indicated.

- (71) a. *'Omai pē* [_{DP} *ha* *me'a*, [_{CP} *te ke loto* [_{KP} *ki aí_i*]]].
 bring EMPH NONSPEC **thing** SBJV 2.SG want DAT **there-DA**
 ‘Bring whatever_i you like _____i.’
- b. *'Oku ma loto ke ke fai ma'amaua* [_{DP} *ha me'a_i pē*
 pres 1EX.PL want COMP 2.SG do 1EX.PL-BEN NONSPEC **thing emph**
 [_{CP} *te ma kole* ____ *atú*]].
 SBJV 1EX.PL **request** ____ **henceforward-DA**
 ‘We desire that you do for us whatever_i we may request _____i.’
- c. *Te u fiemālie pē au ki* [_{DP} *ha taimi_i pē*
 SBJV 1EX.SG content EMPH 1EX.SG DAT NONSPEC **time EMPH**
 [_{CP} *'e faingamālie* ____ *kiate koé*]].
 SBJV **convenient** ____ DAT **2.SG-DA**
 ‘I will be content only with a time_i that _____i is convenient to you.’
 (adapted from Churchward 1953:270)

In (71a), the pronoun *ai* ‘there,’ which corresponds to the relativized noun *me'a* ‘thing’ bears the definite accent. In (71b) and (71c), wherein the relative clause contains a gap corresponding to the relativized noun, the definite accent is realized at the right edge of that clause.

In all three cases, the relativized element (gap or pronoun) within the free relative is definite-specific within that clause, meaning roughly ‘the thing’ (a, b) or ‘the time’ (c). At the same time, its binder – the external head of the relative – is indefinite-nonspecific as an argument of the matrix clause, where it means roughly ‘any thing’ (a, b) or ‘any time’ (c)). Churchward (1953:270-1) expresses a similar intuition, noting that despite the apparent strangeness of

⁷⁹Most psych verbs in Tongan are intransitives which assign an experiencer theta-role to their single argument, which takes absolutive case; the theme DP, if present, appears with one of the dative case markers *'i* or *ki*. See Tchekhoff (1981) for a fuller discussion.

these examples, in all cases “the thing referred to, though indefinite from one point of view, is definite from another.” The long-distance relation between markers of definiteness and specificity in Tongan allows this to be captured by using a nonspecific determiner with the head noun in the matrix clause and an anaphoric demonstrative clitic with its trace in the relative clause.

2.6. Universal Quantifiers

Tongan has two words, *kātoa* and *kotoa*, that are roughly equivalent to English ‘all,’ ‘whole,’ or ‘every.’ The difference in meaning between the two is difficult to ascertain: *Kātoa*, when it quantifies over an argument or modifies a predicate, is glossed ‘all, whole, complete’ (Churchward 1959:254, Thompson & Thompson 2000:114) or ‘all, total, whole’ (Tu’inukuafe 1992:175). *Kotoa* is glossed ‘all, every, whole’ (Churchward 1959:273, Thompson & Thompson 2000:117) or simply ‘whole’ (Tu’inukuafe 1992:177). Churchward (1959:273) adds that the main difference in meaning between the two is that *kātoa* is “stronger.”

Unlike English *all* or *every*, these words do not appear in a determiner-like position. Rather, within nominal expressions, they appear post-nominally. Churchward (1959) and Thompson and Thompson (2000) classify them in this position as adjectives. They may also quantify over predicates and are thus also classified by these lexicographers as adverbs meaning ‘completely.’ *Kātoa*, but not *kotoa* is also able to function as either a predicate or an argument at clause level, and it is thus additionally classified as either a noun meaning ‘whole, total, total number of amount’ or an intransitive verb meaning ‘(to be) whole or complete.’⁸⁰

⁸⁰ Churchward (1959:254) lists a single entry for *kātoa* but categorizes it three ways, with distinct (but similar) definitions for each: “adjective or intransitive verb [...] adverb[...] noun” whereas he categorizes *kotoa* (1959:273) simply as “adjective or adverb,” with a single definition. Thompson and Thompson (2000:114, 117) who borrow heavily from Churchward (1959) categorize *kātoa* simply as “adjective/verb” and *kotoa* as “adjective/adverb.” In the context of this dissertation, I am interested in the quantificational use of *kotoa* and

Despite their (partial) categorization by lexicographers as adjectives, *kātoa* and *kotoa* occupy a distinct position at the far right edge of the nominal expression, following even the definite accent, as shown in (72) and (73).

- (72) a. *’i he fonuá kotoa pē*⁸¹
 DAT SPEC country-DA *kotoa pē*
 ‘in the whole country’
- b. *’a e fanga manú kotoa pē*
 ABS SPEC ASP animal-DA *kotoa pē*
 ‘all the animals’

(adapted from Churchward 1959:277)

- (73) *’Oku vākē ’a e fanga pató kotoa.*
 PRES⁸² make-noise ABS SPEC ASP duck-DA *kotoa*
 ‘All the ducks were making noise.’

(Chung 1978:191)

Comparing (72a,b), above, to (74a,b), below, we can see that definiteness affects the interpretation of *kotoa pē*. In (a), the difference appears, superficially, to be a distinction in the interpretation of number, *i.e.* that the presence of the definite accent forces a singular reading. However, the contrast in (b) show that this is not the case. Rather, as Churchward (1959:277) notes, the presence of the definite accent indicates that “*kotoa* or *kātoa* has a more restricted meaning or application.” The same distinction arises in English, as can be seen most easily by comparing the paraphrases of (72b) and (74b). *All animals* generally denotes

kātoa within nominal expressions and thus will not be examining their other functions (as adverbs, predicates, or nominals) here.

⁸¹*Kotoa* is often, but not always, followed by the intensifier *pē* which Churchward (1953:202) defines as “only, merely, just, exactly [...]” and describes as “intensifying the idea conveyed by the word it qualifies.”

⁸²Chung here glosses *’oku* as ‘progressive,’ which is consistent with the paraphrase of the sentence. For consistency with my other examples, I gloss it here as ‘present,’ following Churchward (1959), but note that the temporality associated with *’oku* is discourse-anaphoric, thus allowing it to be interpreted, as Churchward (1959:38) notes, as “concurrent with another event or state at a past or future time, as indicated by the context.”

the set containing every animal in existence), and *all the animals* generally denotes the entirety of a discourse-bounded set of animals. Similarly, in (75), the definite nominal expressions with *kotoa* are equivalent to ‘all the astronomers,’ ‘the whole sky,’ and ‘all the people.’

- (74) a. *’i he fonua kotoa pē*
 DAT SPEC country *kotoa pē*
 ‘in all countries’
- b. *’a e fanga manu kotoa pē*
 ABS SPEC ASP animal *kotoa pē*
 ‘all animals’

(adapted from Churchward 1953:277)

- (75) a. *Na’e ngāue fakataha ’a e kau ’asitalōnomá kotoa.*
 PAST work together ABS SPEC ASP astronomer-DA *kotoa*
 ‘**All the astronomers** (*i.e.* the whole of this particular group of astronomers) worked together.’
- b. *Na’e hā ’asinisini ’a e langí kātoa, pea na’e fiefia lahi*
 PAST appear clear ABS SPEC sky-DA *kātoa* and PAST happy much
 ai ’a e kakaí kotoa pē.
 there ABS SPEC people-DA *kotoa pē*
 ‘The **whole sky** showed up clearly, **and all the people** were very glad about it.’

(adapted from Churchward 1953:278)

Thus, *kātoa* and *kōtoa* are similar in meaning to the English universal quantifiers *all* and *every*, and they interact in much the same way with the definiteness of the nominal they quantify over. Their similarity to English universal quantifiers even extends to their ability to undergo so-called quantifier float, as described by Chung (1978:189-196) and exemplified in

(76).⁸³ On this basis, I consider both *kātoa* and *kotoa* to be universal quantifiers, merged in Q^0 .

- (76) a. 'Oku vākē 'a e fanga pató kotoa.
 PRES make-noise ABS SPEC ASP **duck-DA kotoa**
 'All the ducks were making noise.'
- b. 'Oku vākē kotoa 'a e fanga pató.
 PRES make-noise **kotoa** ABS SPEC ASP **duck-DA**
 'The ducks were **all** making noise.'

(Chung 1978:190)

Chung (1978:189-190) describes the position of *kotoa* as ambiguous in relation to NP. On one hand, she notes that it moves with NP in processes such as topicalization. On the other, the fact that it consistently appears to the right of the definite accent indicates that its surface position is outside NP. In fact, *kātoa* and *kotoa* fit nicely into the cross-linguistic model of quantifiers developed by Giusti (1991), in which they are functional heads in the periphery of nominal expressions, above NP.⁸⁴ Specifically, she proposes that QP dominates DP. Given their normal position to the right of the definite accent, I propose that *kātoa* and *kotoa* dominate $\text{Dem}_{\text{ANA}}\text{P}$ when it is present. Just as DP is merged as the complement of Dem^0 and moves leftward to [Spec, DemP], so DemP is merged as the complement of Q^0 and moves leftward to [Spec, QP]. Thus, Q^0 (*kātoa* or *kotoa*) appears to the right of Dem^0 (the definite

⁸³It would seem, in fact, that at least some of the situations in which *kotoa* and *kātoa* would be classified by Churchward (1959) and Thompson and Thompson (2000) as adverbs are likely cases of quantifier float, in which the quantifier appears to be part of the predicate despite having originated within a nominal argument.

⁸⁴Giusti (1991:443) notes that one of the differences, cross-linguistically, between quantifiers and adjectives is that the latter can serve as predicates while the former cannot. This would seem to be in conflict with either the current analysis of *kātoa* as a quantifier or the classification by Churchward (1959) and Thompson and Thompson (2000) of *kātoa* as sometimes a predicate. An example of *kotoa* functioning as a predicate meaning 'to be whole' is given in (i). Given the fluidity of lexical classes in Tongan, this is not particularly surprising.

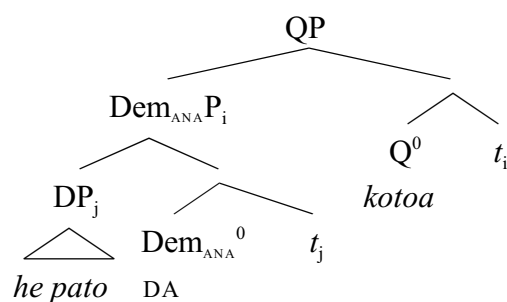
(i) 'oku **kātoa** 'a e māhiná.
 PRES **kātoa** ABS SPEC moon-DA
 'The moon is full.'

(adapted from Churchward 1959:316)

accent or a demonstrative clitic), just as Dem^0 appears to the right of DP. This proposal is illustrated in Figure 5, below.

FIGURE 5: POSITION OF Q^0 IN TONGAN NOMINAL EXPRESSIONS

he pató kotoa
 SPEC duck-DA Q
 ‘all the ducks’



It is worth noting here that the universal quantifiers, *kātoa* and *kotoa*, are the only quantifiers in Tongan that can be merged in Q^0 ; however, they are far from the only quantifiers in the language. Chung (1978:191) notes that other quantificational elements in Tongan, such as numerals, cannot undergo quantifier float. And while there are a handful of idioms and special constructions in which a word or phrase within the nominal expression (not necessarily quantificational) may optionally follow the definite accent, *kātoa* and *kotoa* are the only elements which do so obligatorily or regularly. Other quantificational elements within Tongan nominal expressions – nominal aspect markers, modifying numerals, and the adjectives *si'i* ‘small’ and *lahi* ‘large’ when used quantificationally – appear in different positions, discussed in Chapter 4.

2.7. Chapter Summary

I began this chapter by developing working definitions of both definiteness and specificity based on existing literature, and then examining Tongan data to reveal how they play out in that language. Neither specificity nor definiteness was ultimately taken to be a semantic primitive.

Specificity is taken to refer to the grammatical encoding of wide scope in opaque contexts and of referentiality elsewhere, as per Lyons (1999), who notes that some languages do not mark specificity in any context; others do so only when it marks a scopal distinction; and some do so in all contexts. Tongan, was shown to fall into the third category.

A working definition of definiteness was adopted based on Hawkins (1978) and Cowper and Hall (2002), whereby a DP is definite if it is referentially indexed to something already present in the discourse or to the entire set of things which correspond to the nominal predicate.

Work by Churchward (1953), Dukes (1996), Hendrick (2005), and Anderson and Otsuka (2006) on the distribution of Tongan determiners and the definite accent indicated that the above definition of definiteness works well for this language, but that the meaning of specificity is more difficult to pin down. In a sense, the quality marked by *he* without DA seems to be the remainder between the nonspecific, indefinite *ha* and the specific, definite *he* + DA, while its distribution overlaps with both of these. I concluded that since *he* without the DA most frequently corresponds to referentiality and/or wide scope, it is best treated – for the purposes of this dissertation, at least – as marking a morphosyntactic feature I call [SPECIFIC], although that feature in Tongan may not be semantically identical to its English counterpart.

The distribution of definiteness and specificity markers in Tongan provides strong evidence that they are associated with separate grammatical categories. Despite the apparent synchronicity with the claim of Lyons (1999) and Gillon (2006) that definiteness is uniquely associated with D⁰, and specificity with a lower head, the facts of Tongan are difficult to

reconcile with such an analysis. In Tongan, as in Niuean (Gorrie *et al.* 2010), definiteness is not associated with the head that is necessary for argumenthood. Taking argumenthood and (potential) reference as more essential to than definiteness to D^0 , I proposed that specificity in Tongan is associated with D^0 and definiteness with a higher head.

Previous work on the definite accent, particularly the historical analysis of Clark (1974) and the empirical investigation of his claims by Anderson and Otsuka (2006) shows that the DA is the reflex of a third-person demonstrative clitic, *-*a*. Having become phonologically bleached, it is now simply a null mora which is enclitic on DP, realized as a lengthening of the final vowel and, unless that vowel was already bimoraic (hence stressed) a stress shift from the penultimate to the final vowel of that phrase. Morphosyntactically, it is an unmarked demonstrative head historically associated with the third person but synchronically dissociated from the paradigm of spatial deixis in Tongan and reanalyzed as a marker of anaphoric deixis, or definiteness. As such, it is merged in the left periphery, above D^0 , in a position I have labeled $\text{Dem}_{\text{ANA}}^0$. Its spellout position at the right edge of DP results from roll-up movement of DP from $[\text{Comp}, \text{Dem}_{\text{ANA}}^0]$ to $[\text{Spec}, \text{Dem}_{\text{ANA}}^0 \text{P}]$.

Despite the fact that definiteness is encoded on a separate head from specificity in Tongan, the cross-linguistic observation that definiteness is dependent on specificity does hold in the language. In languages such as English, a [DEFINITE] feature has been proposed which is dependent on [SPECIFIC] in the feature geometry of D^0 (Cowper & Hall, 2002). In Tongan, $\text{Dem}_{\text{ANA}}^0$, which is definite by interpretation, selects as its complement a DP with the feature [SPECIFIC].

In addition to the definite accent, Tongan possesses two spatial demonstrative particles *-ni* and *-na*, which I propose are merged in a lower position, internal or adjacent to NP, which I label Dem_{sp}^0 . Interestingly, while the dependence of definiteness and specificity is preserved in Tongan, despite their structural dissociation from one another, no such dependence is observed between anaphoric and spatial deixis in the language. Anaphoric deixis, or definiteness, is neither necessary nor sufficient for the felicitous use of spatial deixis. There

is, however, a dependency between spatial deixis and specificity; it is unclear to me whether this dependency is encoded syntactically or is purely pragmatic.

While there are some apparent counter-examples to the dependency of definiteness on specificity in Tongan, as noted in Churchward (1953) and discussed in section 2.5.6., these seem to be limited to relative clauses – specifically to situations in which the head nominal is definite within the relative clause itself but is indefinite and nonspecific in the matrix sentence, as in (70). Thus, it seems that in Tongan, a single referent can be both specific/definite and nonspecific/indefinite at once, reflecting the shift in point of view between main and subordinate clauses, thanks to the long-distance relation between definiteness and specificity.

Finally, at the rightmost edge of the nominal expression, we see the same type of roll-up movement by which DP moves to [Spec Dem_{ANA}P] reiterated, in this case moving DemP to [Spec, QP]. This derives a pattern of apparent right-headedness within the periphery of nominal expressions, with the highest functional heads – universal quantifiers in Q⁰ and demonstratives in Dem⁰ – appearing at the right edge of the nominal expression. Looking at this roll-up movement solely as it applies to DP within DemP, it might be argued that it is phonologically driven, as all of the elements which may appear in Dem⁰ are phrasal enclitics. However, the fact that the same movement applies to DemP within QP provides evidence to the contrary, as both *kātoa* and *kotoa* are phonologically independent morphemes.

Chapter 3

Pronouns and the Syntax of Possession

The analyses of pronominalization and possession in Tongan are presented together because the two phenomena are intertwined in a number of ways. Possessors can appear in two different positions within nominal expressions: pre-nuclear (before the possessum) or post-nuclear (after the possessum);⁸⁵ however, whereas post-nuclear possessors may be lexical DPs, strong pronouns, or elliptical pronouns, pre-nuclear possessors may only be clitic pronouns. The positions in which possessors may appear within nominal expressions are parallel in interesting ways to those of arguments within verbal clauses; in particular, both exhibit a process whereby pronominal clitics appear in the left periphery, with optional doubling by either a strong pronoun or a non-pronominal DP on the right. Moreover, Tongan has a robust array of pronominal forms, particularly in the possessive paradigms. Part of the reason for this, as I shall show, is that some classes of pro-forms are syntactically derived from others, and this derivation can include fusion of a personal pronoun with other syntactic heads, such as a genitive case marker. In order to present an orderly account of possession in Tongan, therefore, it is essential to include a discussion of personal pronouns – their syntactic categories, their internal syntactic structures, and their ϕ -feature geometries.

In this chapter, I also examine another apparent long-distance relation – that between the pre-nuclear possessive pronouns, which are left-peripheral elements, and post-nuclear possessors (both pronominal and lexical). This relation is evident in the allowability of clitic doubling of possessors. The analysis is developed in detail in section 3.4.; in short, I propose that both pre- and post-nuclear possessors are base-generated in [Spec, *nP*], an argument position licensed by n^0 . Pre-nuclear possessors undergo cliticization to D^0 , while post-nuclear possessors remain *in situ*. A possessive phrase (PossP) dominates *nP*; this phrase is roughly

⁸⁵To mitigate the confusion that arises when discussing the relative positions of a DP and a noun, both within a matrix nominal expression, I am adopting the terminology of Mosel and Hovdhaugen (1992): The head noun of the matrix nominal expression, which is the possessum, will be considered its nucleus; the modifying nominal expression, *i.e.* the possessor, will be referred to as *pre-nuclear* when it precedes the nucleus and *post-nuclear* when it follows the nucleus. Churchward (1953) uses the terms *preposed* and *postposed*.

The proliferation of pro-forms in Tongan comes from the rich array of φ -features in the language (Tongan has four-way person and three-way number systems, yielding 12 distinct φ^0 s) in combination with their morphosyntactic complexity. The particularly robust class of genitive determiners results from the combinatorial possibilities that arise in a language with 12 φ^0 s, four determiners, and two genitive case particles.

As is the case in numerous Polynesian languages, there are two different genitive case particles in Tongan, reflecting two types of possession, thus doubling the twelve φ^0 configurations to twenty-four case- φ combinations. Following the taxonomy of pronouns, I present a discussion of these two types of possession (section 3.2). The choice of one or another type of possession is determined by a combination of lexical, semantic, and pragmatic factors; syntactically, I propose that it is encoded by different “flavours” of n^0 , which not only check different cases but also assign different θ -roles to possessa.

In section 3.3, I present a proposal for the geometry of Tongan φ -features (section 3.3), thus completing my morphosyntactic analysis of non-possessive pro-forms in the language and setting the scene for the derivation of pre- and post-nuclear possessive pronouns. In section 3.4, I present my proposal for the structure of genitive DPs in Tongan, as summarized above. I propose a clause-like architecture in which the possessum functions as predicate and the possessor is its argument. This portion of the chapter includes a discussion of the merge and spellout positions, Θ -licensing, and case-marking of possessors as well as predicate-fronting.

In section 3.5, I focus on the pre-nuclear possessive pronouns, developing an analysis of cliticization that accounts for both clitic-doubling and the peculiar fact that both clitic and strong possessive pronouns contain overt genitive case particles. It is in the derivation of pre-nuclear possessive pronouns that the theme of the thesis – long-distance interactions between left-peripheral elements and elements to the right of N^0 – emerges in this chapter.

Section 3.6 shows how the parallel between nominal expressions and clauses, while not perfect, can be extended. The relation between pre- and post-nuclear possessive pronouns is an echo of the relation in CP between pre- and post-verbal argument pronouns.

In section 3.7, I introduce another possessive-like construction; however, I do not develop an extensive analysis of it in this chapter. Although its semantics are similar to those of “true” possession, its syntax is very different, and I propose that it is in fact better treated as an expression of nominal aspect, which is explored in Chapter 4. I conclude the chapter with a brief summary (section 3.8).

3.1. A Taxonomy of Tongan Pro-forms

Tongan has 192 pro-forms, which can be subdivided into six syntactic categories: 12 Strong personal pronouns, 12 clitic personal pronouns, 24 post-nuclear possessive pronouns, 96 pre-nuclear possessive pronouns,⁸⁶ 24 elliptical possessive pronouns, and 24 benefactive pronouns. However, I propose that the number of basic categories – and the number of members within each category – is lower still and that the proliferation of pro-forms results from syntactic operations. As a result of these operations, basic pro-forms become part of larger structures which contain more morphosyntactic heads and therefore encode more distinctions.

I argue below that pre-nuclear possessive pronouns and clitic personal pronouns are both derived from the same set of φ^0 s, of which there are 12. Clitic personal pronouns are derived via adjunction of a φ^0 to a Tense-Aspect-Mood Marker (TAM) in Fin^0 . Pre-nuclear possessive pronouns are derived via cliticization of φ^0 to a genitive case marker (in Poss^0) and, subsequently, of Poss^0 - φ^0 to a determiner (in D^0). In the case of clitic personal pronouns, each φ^0 is spelled out as an enclitic on the TAM. Although the phonological form of each of the clitic and the TAM varies depending on the other, the φ^0 retains a degree of lexical independence. In contrast to this, the amalgamation of φ^0 with Poss^0 and D^0 is more phonologically fused, resulting in what appears to be a paradigm of 96 members.

⁸⁶There are 13 syncretisms in the paradigm of D^0 genitive pronouns, bringing the total number of discrete forms down to 83.

Similarly, there are underlyingly 12 strong possessive pronouns, but these are either marked with one of two case-markers, yielding 24 post-nuclear possessive pro-forms, or with one of two benefactive case-markers, yielding 24 benefactive pro-forms. The 24 elliptical pronouns are derived via right-dislocation of a possessum, stranding a post-nuclear possessive pronoun with a determiner (always specific and non-diminutive) and the definite accent, both of which encliticize to it phonologically.

Of course, the notion that Tongan pronouns – or pronouns in any language – can be decomposed into smaller constituents is not a novel one. The remarkable transparency of Polynesian pronouns reveals has long led historical linguists (*e.g.* Churchward 1953, Morton 1962, Wilson 1982) to claim that these pronouns encode chunks of syntax – either synchronically (Morton 1962) or diachronically (Churchward 1953) – and they propose specific sound changes to account for the few opaque exceptions. Their proposals are consistent with the much more recent theoretical work of researchers like Cardinaletti and Starke (1999) and Déchaine and Wiltschko (2002), who propose that pronouns essentially realize pieces of syntactic structure – heads or phrases (and demonstrate this in languages whose pronouns are less transparent). This claim is what I am adopting here.

The various paradigms of Tongan pronouns and their morphological compositions are exemplified in (77) via the first-person exclusive plural member of each.

- (77) a. clitic pronoun (pre-verbal): *mau*
mau
 1EX.PL
 ‘we’
- b. strong (post-verbal) cardinal pronoun: *kimautolu*
ki+mau + tolu
 D+1EX.PL + three
 ‘we’ or ‘us’ (depending on case)

- c. pre-nuclear possessive pronoun: *he'ema*
he + 'a + *mau*⁸⁷
 SPEC+GEN_{SBJ} + 1EX.PL
 'our'
- d. post-nuclear possessive pronoun: *'amautolu*
 'a + ∅ + *mau* + *tolu*
 GEN_{SBJ} + D + 1EX.PL + three
 'our'
- e. elliptical/emphatic possessive pronoun: *ha'amautolu*^{88, 89}
he + ∅ + 'a + *mau* + *tolu* + DA
 SPEC+[...]+GEN_{SBJ} + 1EX.PL + three + DEF
 'ours' (elliptical, as in *lets bring ours*)

Note that the same root, *mau*, recurs throughout the examples in (77). In (77a), it stands alone as a clitic pronoun; in the others, it is combined with other morphemes, including case markers, determiners, and dummy morphemes to form more complex pronouns.

I propose, following Cardinaletti and Starke (1999) that clitic pronouns such as *mau* are X^0 s. Specifically, I propose that they are ϕ^0 s, and that such heads form the pronominal core of all other pronouns. This is not always as transparent in other languages as it is in Tongan, and even in Tongan it is sometimes obscured by allomorphy, morphological fusion, or suppletion.

⁸⁷I have followed Churchward (1953: 137-138) in undoing the vowel harmony which has caused 'a [ʔa] to become 'e [ʔe] after the specific determiner *he* in the pre-nuclear and emphatic forms.

⁸⁸Churchward (1953) notes that although the elliptical (*emphatic*, in his terminology) pronouns are not always written with an accent, in spoken Tongan, they are always pronounced with the definite accent at their right edge.

⁸⁹Note that the assimilation of the vowels between the determiner and the genitive pronoun seems to have occurred in opposite directions in the pre-nuclear and emphatic possessive pronouns. In the former (77c), the /a/ of the genitive case marker 'a has undergone assimilation to [e]. In the latter (77e), the /e/ of *he* has undergone assimilation to [a]. I have no explanation for this, but it does seem to support the notion that they are generated independently by different morphosyntactic processes.

The distribution of each series of Tongan pronouns is consistent with the syntactic structure suggested by its morphology. Macdonald (2006, to appear) argues that these complex pronouns provide support for Déchaine and Wiltschko's (2002) analysis of personal pronouns as syntactic elements that instantiate various syntactic categories. I will be adopting here a modified version of Macdonald (2006, to appear).⁹⁰ A survey of the specific syntactic structures of the various types of Tongan pronouns constitutes the balance of this section, and a more thorough discussion of the morphosyntax of possession – in particular, the derivation of pre-nuclear possessive pronouns – follows in sections 3.2 and 3.3.

3.1.1. Clitic personal pronouns

The personal pronouns in Tongan are of two types: clitic, subject-like pronouns⁹¹ and strong pronouns. Clitic pronouns are morphologically simple; they consist of pronominal heads which also serve as the roots of the other pronouns. These pronouns simply encode the person and number of an argument, and thus I propose that they are properly called ϕ^0 s.⁹² I repeat (77a) here as (78) for reference.

⁹⁰Macdonald (2006, to appear) proposes that the D^0 possessive pronouns, which I call possessive pro- D^0 s, represent a larger piece of syntactic structure than just D^0 – specifically [D^0 -Poss 0 - ϕ^0] – and require a nominal XP complement (the possessum). Thus, while I label them as D^0 , the structure I propose is a kind of unsaturated DP. In the current proposal, I treat them as complex D^0 s, as seen in Figure 13.

⁹¹I use the term *subject-like* here because *subject* is of questionable value in discussing ergative languages. These clitic pronouns exhibit a nominative distribution; they cross-reference the highest argument in the clause, whether that is A (ergative) or S (absolutive) (Otsuka (2000:153) proposes that this is because they must have an external Θ -role). Thus, their distribution can be described as subject-like, although it is not clear that the arguments they cross-reference can be accurately referred to as subjects.

⁹²Adger and Harbour (2008:2) define ϕ as a category consisting of those features which are “involved in predicate-argument agreement,” typically including person and number, but also including “those [features] involved in honorification and definiteness.” I do not include these latter features (which, in the current analysis, correspond to [DEFINITE], [SPECIFIC], and [DIMINUTIVE]) as dependents of ϕ^0 , but as dependents of D^0 and Dem^0 . I limit the catalogue of ϕ^0 -dependents here to person and number features. However, I make no claim as to the proper definition of ϕ as a category of features.

- (78) clitic pronoun: *mau*
 φ
mau
 1EX.PL
 ‘we’

Clitic personal pronouns can only occur as verbal arguments – either the single argument of an intransitive clause (S), or the external argument of a transitive clause (A) – but they do not surface in argument position. Instead, they always appear in the left periphery of CP, immediately following the TAM or conjunction, as in (79).⁹³

- (79) *Te mau fakataha he Falaite kaha'ú.*
 SBJV 1EX.PL meet SPEC Friday next-DA
 ‘We will meet next Friday.’

(Shumway 1971:102)

In most cases, clitic pronouns are phonologically enclitic on the TAMs with which they occur; however, there are some exceptions to this generalization. Macdonald (2006) thus proposes that they are morphosyntactic clitics, although not necessarily phonological ones. As can be seen in Table 8, most clitic pronouns are monomoraic; they thus need phonological support and, hence, lean on the TAMs to which they are adjoined. In these cases, they are clitics in all senses of the word. However, the plural forms *mau*, *tau*, *mou*, and *nau*, as well as the first-person singular form *ou* – are bimoraic and thus phonologically independent.

⁹³As noted earlier, Kikusawa (2002) and Ball (2008) treat these particles as person/number-agreement suffixes and the TAMs as inflecting auxiliaries (Kikusawa proposes that TAMs are aspectual auxiliary verbs, and Ball (2008) proposes that they are non-verbal auxiliaries, a category he identifies as having both verb-like and complementizer-like qualities). Kikusawa 2003 moderates this position somewhat, treating these and similar particles in other Oceanic languages as “clitic pronouns” but noting that she uses the term “loosely [...] to include both agreement markers, clitic pronouns, and clitic-like pronouns (sic)” (Kikusawa 2003:162n5). She notes, citing Moyse-Faurie (1997:7), that the merging of these pronominal elements with TAMs is rare in all other Oceanic languages (Kikusawa 2003:175). Otsuka (2000:144) argues against an agreement analysis of cliticization on the grounds that clitic pronouns in Tongan cannot be doubled by a non-pronominal DP.

Nevertheless, all of these pronouns exhibit two essential hallmarks of cliticness, as defined by Cardinaletti and Starke (1999): position and doubling. Unlike their post-verbal counterparts, the pre-verbal pronouns of Tongan do not occur in XP positions, such as case-marked arguments positions or as complements of prepositions or the predicate-marking particle *ko*. Rather, they are syntactically – and often phonologically and morphologically – amalgamated with TAM particles, themselves clitic-like. Even when not phonologically dependent on the TAMs, pre-verbal pronouns in Tongan can trigger allomorphy in them (Churchward 1953, Dukes 1996, Otsuka 148).⁹⁴ Other elements immediately following TAMs do not have this effect. This close amalgamation, according to Cardinaletti and Starke (1999:168) is indicative of being X^0 and differentiates clitics not only from strong pronouns but also from other types of weak pronouns.⁹⁵ Furthermore, the pre-verbal particles of Tongan can be doubled by their post-verbal counterparts. Cardinaletti and Starke state (1999:169) that “Doubling is always *clitic* doubling [their emphasis],” i.e. only clitics may be doubled.

The paradigm of clitic pronouns in Tongan is presented in Table 8.

⁹⁴Where a bimoraic TAM is followed by a monomoraic clitic pronoun, the shift of stress to the second syllable of the TAM indicates that the TAM and the enclitic pronoun have undergone phonological restructuring to form a single, trimoraic phonological word; the final syllable of the TAM is the penult of this word and bears word-level stress. What is less clear to me is what happens when a cluster consisting of a bimoraic pronominal clitic and a mono- or bimoraic TAM co-occurs. However, the allomorphy triggered on the TAM suggests that restructuring occurs, even when it is vacuous in terms of stress placement. The bimoraicity of certain pronominal clitics in Tongan, and hence their phonological independence, seems to make Tongan a counterexample to the generalization made by Sportiche (1995:4*n*) that syntactic clitics are necessarily phonological clitics and possibly to Cardinaletti and Starke’s (1999) claim that clitics cannot bear lexical stress.

⁹⁵Cardinaletti and Starke (1999) devote a considerable amount of their analysis to differentiating between two types of deficient pronouns – clitics, and what they call “weak” pronouns. The former exhibit “severe deficiency,” while the latter exhibit “mild deficiency.” In their analysis, only clitics are X^0 s; (non-clitic) weak and strong pronouns are both XPs. Non-clitic, weak pronouns are distinguished from their strong counterparts in that only the latter can occupy a case-marked argument position. Tongan does not appear to have a class of non-clitic weak pronouns of this type.

TABLE 8: CLITIC PERSONAL PRONOUNS

	1EXC	1INC	2	3
SINGULAR	<i>ou, ku, u,</i> <i>kau</i> ⁹⁶	<i>te</i>	<i>ke</i>	<i>ne</i>
DUAL	<i>ma</i>	<i>ta</i>	<i>mo</i>	<i>na</i>
PLURAL	<i>mau</i>	<i>tau</i>	<i>mou</i>	<i>nau</i>

3.1.2. Strong personal pronouns

Although not derived via syntactic operations, strong personal pronouns are morphologically and syntactically complex. In the dual and plural, each consists of *ki-* (which I propose is a dummy D⁰), a pronominal root (φ^0), and a numeral (which I propose is a dummy N⁰). In the singular, however, the dummy heads are phonologically null, and – as will be discussed in section 3.3.5, below – suppletion occurs (I propose that in these cases, a portmanteau morpheme within a pronoun instantiates both φ^0 and one or both dummy heads). I repeat (77b) here as (80) for reference.

- (80) strong cardinal pronoun: *kitautolu*
 DETERMINER φ NUMERAL
ki + *mau* + *tolu*
 dummy D 1EX.PL three
 ‘we’ or ‘us’

The morpheme *ki-* is homophonous with the distal dative case marker, but it does not function as a case marker in these pronouns, as all of them must check case and be preceded

⁹⁶The four allomorphs of the first-person exclusive singular clitic pronoun are distributed as follows: *ou*, after *'oku*; *ku* after *ma'a*; *u* after any other TAM or conjunction; and *kau* when no TAM or conjunction is present. In the strong personal and possessive pronominal paradigms, *au* surfaces as a portmanteau morpheme realizing D⁰- φ^0 -N⁰ and *ku* as a portmanteau morpheme realizing φ^0 -N⁰.

by a case marker according to their structural position, like lexical DPs. Cardinaletti and Starke (1999), who examine the syntax and morphology of pronouns in a number of Indo-European (French, Italian, German, Slovak) and non-Indo-European languages (Hungarian, Hebrew, Gun), note that strong pronouns often contain a morpheme which resembles a dative case marker. They propose that this “dummy” dative case marker is essentially a referential head (and that in strong pronouns which do not have this head overtly, it is present but null). Following their insight, I propose that *ki-* in the strong personal pronouns of Tongan is a dummy referential head. I propose that in the strong Tongan pronouns, this dummy referential head is syntactically a determiner, D^0 , and that its complement, ϕ^0 , is a separate, lower head. Thus I propose that *ki-* is a dummy D^0 , providing the referential element necessary for a strong pronoun to function as an argument.

This analysis is consistent with the fact that, in terms of their syntax, strong personal pronouns in Tongan behave exactly like lexical DPs: They can be arguments of V, in which case they move to check case, which is realized morphologically by preceding case markers as in (81-82) and they can be the complements of prepositions (83). Given that their external syntax is consistent with that of DPs, it is fitting that their internal syntax is so as well.

- (81) *Na'e tangi lahi 'a kinautolu*
 PAST cry big ABS 3.PL
 ‘**They** cried a lot.’

(Otsuka 2000:58)

- (82) a. *'E 'ave 'e Sione 'a koe.*
 FUT take ERG Sione ABS 2.SG
 ‘Sione will take **you**.’
- b. *'Oku (ne) taa'i 'a Sione 'e ia*
 PRES (3.SG) hit ABS Sione ERG 3.SG
 ‘**He** hit Sione.’

- c. ...*na'a nau pālōti pē kia kinautolu*⁹⁷
 PAST 3.PL vote EMPH DAT 3.PL
 ‘...they only voted for **them(selves)**.’

(Dukes 1996: 104-105)

- (83) ‘*Oku i heni mo kitautolu.*
 PRES DAT here **with 1IN.PL**
 “He is here with us.”

(adapted from Churchward 1953:113)

In the pronominal paradigms, the numerals *ua* and *tolu* are somewhat redundant, in the sense that they reflect the grammatical number in φ^0 . Superficially, these pronouns seem to agree with themselves. I propose that, like *ki-*, the final morphemes represent a dummy head. Given their position at the right edge of the pronoun, I propose that they are dummy N^0 s whose function is to syntactically saturate φ^0 .

The full paradigm of strong personal pronouns in Tongan is provided in Table 9.

TABLE 9: STRONG PERSONAL PRONOUNS

	1EXC	1INC	2	3
SINGULAR	<i>au</i>	<i>kita</i>	<i>koe</i>	<i>ia</i>
DUAL	<i>kimaua</i>	<i>kitaua</i>	<i>kimoua</i>	<i>kinaua</i>
PLURAL	<i>kimautolu</i>	<i>kitautolu</i>	<i>kimoutolu</i>	<i>kinautolu</i>

⁹⁷The dative case markers *i* and *ki* have allomorphs *ia* and *iate*, *kia* and *kiate*, respectively. According to Churchward (1953), the normal distribution is *i* and *ki* before common nouns, *ia* and *kia* before proper nouns, *iate* and *kiate* before nouns. He notes, however, that “sometimes [*ia* and *kia*] are used before the cardinal [strong personal] pronouns,” as is the case in (82c).

3.1.3. Pre-nuclear Possessive Pronouns

As described above, pre-nuclear possessive pronouns consist morphologically of a determiner (D^0), a possessive marker, and a pronominal root, φ^0 . The morphological breakdown of these pronouns given in (77c) is repeated here as (83):

- (83) pre-nuclear possessive pronoun: *he'ema*
- | | | |
|------------|--------------------|--------------|
| DETERMINER | POSSESSIVE | φ |
| <i>he</i> | + 'a | + <i>mau</i> |
| SPEC | GEN _{SBJ} | 1EX.PL |
| 'our' | | |

All four of the basic determiners of Tongan – *ha*, *he*, *si'a*, and *si'i* – occur in pre-nuclear possessive pronouns. Thus, like other determiners in Tongan, D^0 possessive pronouns encode (potential) reference, specificity, and diminutivity of their nominal complement (the possessum). Additionally, through the adjunction of a possessive pronominal clitic, they provide information about the possessor and the type of possessive relation. Some examples are given in (84), below.

- (84) a. *he'eku helé*
 SPEC+1EX.SG knife-DA
 'my knife' (the knife which is mine)
- b. *si'eku helé*
 SPEC.DIM+1EX.SG knife-DA
 'my little knife' (the little knife which is mine)
- c. *ha'aku hele*
 NONSPEC+1EX.SG knife
 'my knife' (a knife which is mine; one of my knives)
- d. *si'aku hele*
 NONSPEC.DIM+1EX.SG knife
 'my little knife' (a little knife which is mine; one of my little knives)
- (adapted from Churchward 1953:130)

The determiner in a pre-nuclear possessive pronoun marks the specificity or non-specificity and diminutivity or non-diminutivity of the possessum. As such, it is different from the dummy D^0 which is present in strong personal pronouns and post-nuclear possessives, whose function is to reflect the referentiality of the pronoun and make it available for case-assignment.

The paradigm of pre-nuclear (D^0) possessive pronouns in Tongan is presented in Table 10. I propose that these pronouns are generated in syntax by the copying of ϕ -features from ϕ^0 to K^0 , via Agree, and the subsequent cliticization of K^0 to D^0 (adapting Uriagereka 1995). The process by which this occurs, and the nature of the long-distance relation between pre- and post-nuclear possessors is discussed at length in section 3.4. A phrase-structure tree in Figure 9 (p. 143) illustrates their derivation and internal structure.

TABLE 10: PRE-NUCLEAR POSSESSIVE PRONOUNS

		Genitive-Subjective				Genitive-Objective			
		Specific		Non-specific		Specific		Non-specific	
		Ordinary	Diminutive	Ordinary	Diminutive	Ordinary	Diminutive	Ordinary	Diminutive
Singular	1 exclusive	<i>he'eku</i>	<i>si'eku</i>	<i>ha'aku</i>	<i>si'aku</i>	<i>hoku</i>	<i>si'oku</i>	<i>haku</i>	<i>si'aku</i>
	1 inclusive	<i>he'ete</i>	<i>si'ete</i>	<i>ha'ate</i>	<i>si'ate</i>	<i>hoto</i>	<i>si'oto</i>	<i>hato</i>	<i>si'ato</i>
	2	<i>ho'o</i>	<i>si'o</i>	<i>ha'o</i>	<i>si'ao</i>	<i>ho</i>	<i>si'o</i>	<i>hao</i>	<i>si'ao</i>
	3	<i>he'ene</i>	<i>si'ene</i>	<i>ha'ane</i>	<i>si'ane</i>	<i>hono</i>	<i>si'ono</i>	<i>hano</i>	<i>si'ano</i>
Dual	1 exclusive	<i>he'ema</i>	<i>si'ema</i>	<i>ha'ama</i>	<i>si'ama</i>	<i>homa</i>	<i>si'oma</i>	<i>hama</i>	<i>si'ama</i>
	1 inclusive	<i>he'eta</i>	<i>si'eta</i>	<i>ha'ata</i>	<i>si'ata</i>	<i>hoa</i>	<i>si'ota</i>	<i>hata</i>	<i>si'ata</i>
	2	<i>ho'omo</i>	<i>si'omo</i>	<i>ha'amo</i>	<i>si'amo</i>	<i>homo</i>	<i>si'omo</i>	<i>hamo</i>	<i>si'amo</i>
	3	<i>he'ena</i>	<i>si'ena</i>	<i>ha'ana</i>	<i>si'ana</i>	<i>hona</i>	<i>si'ona</i>	<i>hana</i>	<i>si'ana</i>
Plural	1 exclusive	<i>he'emau</i>	<i>si'emau</i>	<i>ha'amau</i>	<i>si'amau</i>	<i>homau</i>	<i>si'omau</i>	<i>hamau</i>	<i>si'amau</i>
	1 inclusive	<i>he'etau</i>	<i>si'etau</i>	<i>ha'atau</i>	<i>si'atau</i>	<i>hotau</i>	<i>si'otau</i>	<i>hatau</i>	<i>si'atau</i>
	2	<i>ho'mou</i>	<i>si'omou</i>	<i>ha'amou</i>	<i>si'amou</i>	<i>homou</i>	<i>si'omou</i>	<i>hamou</i>	<i>si'amou</i>
	3	<i>he'enau</i>	<i>si'enau</i>	<i>ha'anau</i>	<i>si'anau</i>	<i>honau</i>	<i>si'onau</i>	<i>hanau</i>	<i>si'anau</i>

3.1.4. Post-nuclear Possessive Pronouns

Like their pre-nuclear counterparts, post-nuclear possessive pronouns contain a possessive marker and a pronominal root. Unlike them, they lack an overt determiner and end, like the strong personal pronouns, with the numerals *ua* ‘two,’ and *tolu* ‘three’ in the dual and plural. As with the strong personal pronouns, I propose that the numerals in the post-nuclear pronouns instantiate dummy N⁰ and have a null counterpart in the singular. As with the strong personal pronouns, there are suppletive forms in the singular which are portmanteau morphemes realizing a morphological fusion of ϕ^0 and the dummy N⁰. The morphological breakdown of these pronouns given in (77d) is repeated here as (85):

(85) post-nuclear possessive pronoun: *'amautolu*

POSSESSIVE	DETERMINER	Φ	NUMERAL
<i>'a</i>	+ \emptyset	+ <i>mau</i>	+ <i>tolu</i>
GEN _{SBJ}	DUMMY D	1EX.PL	three
‘our’			

As noted above, post-nuclear possessive pronouns are morphologically complex. They consist of (at least) a case particle, a ϕ^0 , and – in the dual and plural – a numeral (*ua* ‘two,’ or *tolu* ‘three’). These same numerals occur in the strong argument pronouns, and I propose above that they function as dummy N⁰s; likewise, they are dummy N⁰s in post-nuclear possessive pronouns as well.

This complexity suggests that these pronouns, like the strong argument pronouns, are best treated as phrasal. Since they have an argument-like function within DP, it is plausible that, like the strong argument pronouns, they contain dummy determiners and should be treated as DPs – being merged, like lexical DPs, in [Spec, *nP*] and assigned genitive case. However, whereas the dummy determiner in a strong argument pronoun is realized overtly with the dative *ki-*, the dummy determiner in the post-nuclear possessive pronouns is null. As is the case with argument pronouns, I propose that the function of dummy D⁰ in post-nuclear

possessive pronouns is to syntactically saturate the pronoun, enabling it to function as an argument and be marked for case.

Unfortunately, the dummy determiner in the post-nuclear possessive pronouns is not as immediately transparent as it is in the argument pronouns. As was shown in section 3.3, the dummy D^0 in the latter is isomorphic with the locative particle *ki-*; this is absent from the post-nuclear possessive pronouns. However, there is another source of morphological evidence for the presence of a dummy D^0 : In the singular, these pronouns have two forms, one with a reduplicated case particle, and one with a single case particle, as shown in Table 11.

TABLE 11: POST-NUCLEAR POSSESSIVE PRONOUNS, WITH ALTERNATIONS IN FORM

		SUBJECTIVE		OBJECTIVE	
1EX	SG	<i>'a'aku</i>	<i>'aku</i>	<i>'o'oku</i>	<i>'oku</i>
	DU	<i>'amaua</i>		<i>'omaua</i>	
	PL	<i>'amautolu</i>		<i>'omautolu</i>	
1INC	SG	<i>'a'ata</i>	<i>'ata</i>	<i>'o'ota</i>	<i>'ota</i>
	DU	<i>'ataua</i>		<i>'otaua</i>	
	PL	<i>'atautolu</i>		<i>'otautolu</i>	
2	SG	<i>'a'au</i>	<i>'au</i>	<i>'o'ou</i>	<i>'ou</i>
	DU	<i>'amoua</i>		<i>'omoua</i>	
	PL	<i>'amoutolu</i>		<i>'omoutolu</i>	
3	SG	<i>'a'ana</i>	<i>'ana</i>	<i>'o'ona</i>	<i>'ona</i>
	DU	<i>'anaua</i>		<i>'onaua</i>	
	PL	<i>'anautolu</i>		<i>'onautolu</i>	

Churchward (1953) illustrates the difference between the alternate forms of post-nuclear pronouns with the example in (86), below. The paraphrases he gives indicate what he describes as a subtle difference in meaning between the pronoun without (86a) and with (86b) the reduplicated case particle. Shumway (1971) treats the pronominal form with the reduplicant as basic and notes that the reduplicant is “sometimes” dropped when the pronoun is used “reflexively” (*i.e.* when it doubles a pre-nuclear possessive pronoun), although he does not offer an explanation.

- (86) a. *Hono* *soté*⁹⁸ *'ona*.
 SPEC.GEN_{OBJ}.3.SG shirt-DA GEN_{OBJ}.3.SG
 ‘His shirt.’ (emphatic)
- b. *Hono* *sote* *'o'oná*
 SPEC.GEN_{OBJ}.3.SG shirt GEN_{OBJ}.RED.3.SG-DA
 ‘His own shirt.’

(adapted from Churchward 1953:142)

I propose that the alternation seen here is between two forms of the dummy D^0 in post-nuclear pronouns – one null, the other a reduplicant of the preceding case particle. Thus, the subtle meaning difference between them is the result of each dummy D^0 encoding a slightly different type of referentiality.

In sum, then, post-nuclear possessive pronouns are strong pronouns, morphologically analogous to strong post-verbal pronouns. Both series consist underlyingly of a dummy D^0 (*ki* for post-verbal pronouns; \emptyset or a reduplicant of the case particle for post-nuclear possessives),

⁹⁸Churchward (1963) notes that the definite accent is placed “abnormally early” in (86a), but does not offer an explanation. In Shumway’s (1974) data, the definite accent always occurs before a post-nuclear possessor, regardless of whether it is pronominal or lexical. However, this is not the case in Churchward (1953), except as noted above, nor in Tchekhoff’s corpus data (1971:59-74), nor is it preferred by my consultant (LMK 2009). Thus it is unclear whether the variable position of the definite accent in (86) is related to the presence or absence of the reduplicated case particle in the possessive pronoun and which of these differences contributes to the subtle difference in meaning between the two examples.

a \varnothing^0 head, and a dummy N^0 . Both are merged into argument positions, and both check case in syntax in the same manner as lexical DPs.

The principal difference between the two series of strong pronouns – post-verbal argument pronouns and post-nuclear possessive pronouns – is in the form(s) taken by the dummy D^0 . Orthography exaggerates the differences between them by treating the case particle as a free morpheme in front of argument pronouns and as morphologically bound to their possessive counterparts, but this does not seem to reflect either a syntactic or a phonological distinction – in both situations, the case particle will lean phonologically rightward.

One may wonder at this point whether the pronominal categories can be collapsed even further, treating the post-nuclear possessive pronouns and post-verbal argument pronouns as underlyingly the same and the alternation between *ki* and \varnothing as being phonologically conditioned allomorphy. However, as (87) shows, this is not the case; a genitive case marker may, in fact, precede a strong argument pronoun beginning with *ki-* in certain syntactic environments. Here, the pronoun *kinautolu* (3.PL) is the head of a relative clause, *'oku nau lotu...* ('those who worship...') which, in turn, is the argument of a nominalization, *ko e fakatahataha...* ('the gathering-together of...'). The DP containing the relative clause is case-marked with the genitive marker *'a*, yielding the sequence *'a kinautolu*, not *'anautolu*.

- (87) *Ko e Siasi 'o Sīsū Kalaisi ko e fakatahataha*
 PRED SPEC Church GEN_{OBJ} Jesus Christ PRED SPEC gather-together
'a kinautolu kotoa pē 'oku nau lotu ki he 'Otuá
 GEN_{OBJ} 3.PL all EMPH PRES 3.PL worship DAT spec God-DA
'i hono huafá.
 DAT SPEC+GEN_{OBJ}+3.SG name
 'The Church of Jesus Christ is the gathering-together of all **those** who worship God in his name.'

(adapted from Churchward 1953:145)

To summarize, post-nuclear possessive pronouns in Tongan are DPs. They consist morphologically of a dummy D^0 (usually null, but sometimes in the singular realized as a

reduplicant of the preceding case marker), a φ^0 , and a dummy N^0 (null in the case of singular pronouns; otherwise *ua* ‘two’ or *tolu* ‘three’). Like lexical DPs, they are merged in [Spec, *nP*], assigned a Θ -role (subjective or objective possession) by n^0 , and assigned genitive case *in situ* by *Poss*⁰. The case-markers ‘*a*’ and ‘*o*’ are the morphological realization of both genitive case and one of the two possessive Θ -roles. The structure of post-nuclear possessive pronouns is given in section 3.4, Figure 8, in which I present my proposal for the syntax of post-nuclear possessive DPs.

A potential problem with treating these pronouns as DPs arises in that within clauses, they can function as predicates (88a) but not as arguments. Like other predicates, they can undergo nominalization, in which case they are preceded by a separate determiner (88b). Note that the determiner-possessive pronoun sequence generated this way is spelled out differently than the fused determiner-possessive pronoun in D^0 .

- (88) a. *’Oku ’atautolu ’a e ngāué ni.*
 PRES GEN_{SBJ} +1EX.PL ABS SPEC work DEM_{SP}
 ‘This work **is ours.**’
- b. *’Oku totonu ke tau fiefia ’i he ’atautolu*
 PRES right COMP 1INC.PL happy DAT SPEC GEN_{SBJ} +1EX.PL
’a e ngāué ni.
 ABS SPEC work DEM_{SP}
 ‘We ought to be glad that this work **is ours.**’
 (*lit.* ‘It is right that we rejoice in the **being-ours** of this work.’)
 (adapted from Churchward 1953:144)

Because of their ability to function as predicates, as well as their post-nuclear position within DPs, Churchward (1953) treats post-nuclear possessive pronouns as adjectives. This treatment is consistent with the work of Ihsane (2003), who proposes a tripartite typology of possessive pronouns consisting of determiner, adjectival, and pronominal possessives. However, it is inconsistent with the hypothesis that possessives are arguments of the nouns they modify, and it seems to ignore the fact that these pronouns are transparently case-

marked. It also requires that pronominal and lexical possessors have very different syntax in Tongan – the genitive morpheme acting as a case-marker with lexical possessors but as a kind of predicate-head with possessive ones.

As noted in Chapter 2, Tongan allows DP predicates; this was shown in example (44), repeated here as (89). Even those with a specific determiner (*he* or *si'i*) can be interpreted as predicational (rather than equational). Thus, the ability to function as a predicate does not rule out the possibility that an element is a DP.

- (89) a. *Ko e faiakó ia*
 PRED *he teacher-DA* 3.SG
 ‘He is the teacher.’ (equational)
- b. *Ko ha faiako ia*
 PRED *ha teacher* 3.SG
 ‘He is a teacher.’ (predicational, not uniquely instantiated)
i.e. ‘He is one of the teachers.’

(adapted from Churchward 1953:25)

However, there does seem to be a difference between the types of predication expressed in (88) and (89). In (88), the predicate expresses a relation of possession between two individuals, whereas in (89), it expresses a relation of identity between two individuals.⁹⁹ These differences are reflected morphologically: In (88), HAVE, realized as the genitive particle *ʻa*, takes scope over the individual denoted by the pronoun; in (89), a null BE takes scope over the individual denoted by *he faiakó* ‘the teacher’ or *ha faiako* ‘a teacher,’¹⁰⁰ Thus,

⁹⁹As noted by Otsuka (p.c.), there is also a syntactic difference: The examples in (88) are headed by a TAM, whereas those in (89) are headed by *ko*, a predicator. The structure of equational clauses headed by *ko*-NPs is unclear to me. While the *ko*-NP in these sentences appears to be a predicate, *ko* often seems to function more as a topicalizer or presentative particle (titles of books often start with *ko e* “this is the/a...”).

¹⁰⁰Broschart (1995) argues that Tongan nominal and nominal-like predicates can be categorized as to whether they yield a HAVE reading or a BE reading. When they are preceded by *ko*, a type of presentative predicate marker which introduces nominal(ized) predicates denoting situations which are “clearly visible for the hearer” (Broschart 1995:47), the arguments of HAVE-predicates can be expressed as possessors, but those of BE-predicates cannot. He proposes that Tongan lacks a categorial distinction between nouns and verbs but

in (88) the *'a* of *'atautolu* is not functioning as a case marker but as the head of a predicate, taking the pronominal DP as its complement. This foreshadows something that I will propose in section 3.4, namely that even within DPs, *'a* is more than simply a marker of genitive case; it is simultaneously a possessive head which encodes the possessive relation. More research is needed into the derivation of predicative possessive pronouns, but it seems clear that it is distinct from that of post-nuclear possessors within nominal expressions.

3.1.5. Elliptical Possessive Pronouns

The third type of possessive pronoun in Tongan is what Churchward (1953) calls “emphatic” possessive pronouns. Wilson (1982), examining them in proto-Polynesian possessive marking refers to these pronouns as *elliptical*, a terminology which I will adopt for clarity. These are the most morphologically complex of the possessive pronouns, consisting of a determiner (always *he*, hence always specific and never diminutive), a genitive case morpheme (*'a* or *'o*), a ϕ^0 which encodes the features of the possessor, a numeral ending (\emptyset , *ua* ‘two,’ or *tolu* ‘three’), and a definitive accent. This is illustrated with *ha'amautolú* in example (77e), repeated here as (90).

- (90) elliptical/emphatic possessive pronoun: *ha'amautolú*¹⁰¹
he + \emptyset + *'a* + *mau* + *tolu* + DA
 SPEC+ [...] + GEN_{SBJ} + 1EX.PL + three + Dem_{ANA}
 ‘ours’

instead has a HAVE/BE distinction. This distinction, he proposes, is clearest in nominal(ized) predications. Verbal-type predications (*i.e.* those which begin with a TAM), he argues, “truly intermediate” between HAVE-readings and BE-readings, essentially presenting a situation and then relating it, via the TAM, to the time of speech (Broschart 1995:49).

¹⁰¹Churchward (1953) notes that although the emphatic pronouns are not always written with an accent, in spoken Tongan, they are always pronounced with the definite accent at their right edge.

Churchward notes that these pronouns “may be equivalent either to an emphatic *my* or *our*, etc., or to an elliptical (not predicative) *mine* or *ours*, etc.” (1953:134). Like lexical DPs and post-nuclear possessive pronouns, they can function as arguments, as shown in (91). Unlike post-nuclear possessive pronouns, they cannot function as predicates. Because they obligatorily carry the definite accent (DA), I propose that they are best analyzed as Dem_{ANA}Ps.

- (91) a. *Omi ha'aná*
 bring SPEC-GEN_{SBJ} -3.SG-DA
 ‘Bring his.’
- b. *Omi ha'akú.*
 bring SPEC-GEN_{SBJ} -1EXC.SG-DA
 ‘Bring mine.’

(adapted from Churchward 1953:135)

Structurally, these pronouns appear to have elements in common with both the pre-nuclear (D⁰) and post-nuclear (*n*⁰) possessive pronouns. Like the pre-nuclear series, they contain an overt, meaningful (*i.e.* non-dummy) determiner. However, like the post-nuclear series (and the strong personal pronouns), they also contain a numeral ending – \emptyset in the singular, *ua* ‘two’ in the dual, or *tolu* ‘three’ in the plural.

In earlier work (Macdonald 2006, to appear) I proposed that they consisted of a possessive determiner followed by a dummy N⁰ (isomorphic with the dummy N⁰s in the post-nuclear pronominal series) and the definite accent. Thus, rather than being truly elliptical, I assumed that these pronouns had a dummy N⁰ in place of the possessum. Here, however, I propose a different view, which I believe is more consistent with the data: These elliptical pronouns consist morphologically of a simple determiner (always *he*) followed by a post-nuclear possessive pronoun and the definitive accent. The dummy N⁰ is therefore part of the post-nuclear possessive pronoun and does not instantiate the possessum. In place of the possessum, these pronouns contain a gap, and it is in this sense that they are elliptical.

One interesting characteristic of these pronouns is they may be followed by the possessum NP, as seen in (92). Churchward (1953:134-135) proposes that this is because, in such cases,

the possessum NP is “felt to be simply an addendum or an afterthought appended to a nounal group which is already grammatically complete.”

- (92) a. *Kuo fakatahā mai 'e Kalisi ki Iugosalavia te ne fakafoki leva mei 'Atenisi 'ene kau sotiá ka oku ne kole ke Kalisi ke fakafoki ha'aná kau sotia mei Pelikalate.*
 ‘Yugoslavia has informed Greece that she will withdraw **her soldiers** from Athens immediately, and she requests Greece withdraw **her soldiers** from Belgrade.’
- b. *he'ene kau sotiá*
 SPEC-GEN_{SBJ} -3.SG ASP soldier-DA
 ‘her soldiers’
- c. *ha'aná kau sotia*
 SPEC-GEN_{SBJ} -3.SG-DA ASP soldier
 ‘her soldiers’
 (*lit.* ‘hers, soldiers’)

(adapted from Churchward 1953:135)

A thorough treatment of the elliptical possessive pronouns in Tongan will require much more data and study. As a preliminary analysis, I propose that the possessum (minimally NP, maximally #P) in [Spec, PossP] undergoes right-dislocation (as in (92)), creating ellipsis. Thus dislocated, it may then undergo deletion (as in (91)). The conditions on this right-dislocation include the possessive nominal expression being a DemP (since the DA is always present) and the determiner being specific (predicted in a DemP due to the dependence of definiteness on specificity) and non-diminutive. What remains within the possessive DemP after dislocation of the possessum are the determiner *he* (phonologically reduced to *hV*, where the value of *V* is identical to the next vowel), a post-nuclear possessive pronoun, and the definite accent. Thus, these pronouns are syntactically generated objects, rather than strictly lexical.

3.1.6. Benefactive Pronouns

In addition to the three series of possessive pronouns and the two of personal pronouns, Tongan also contains a series of benefactive pronominal elements, which Churchward (1953) treats as “pronominal adverbs.” Structurally, they resemble post-nuclear possessive pronouns, with the benefactive case markers *ma'a* and *mo'o* replacing *'a* and *'o* respectively. Clark (2000) proposes that the benefactive marks a kind of “irrealis possession,” or “the intention or anticipation that something will be possessed.”

However, these pronouns seem to have, as Churchward (1953) notes, an adverbial function, in that they are modifiers (or perhaps arguments) of predicates rather than of nominals. In (93), although the ultimate outcome is an ontological relationship of possession between a person and an object, it seems that the syntactic relation is held between the benefactive pronoun and the VP which denotes the act of creating or leaving that object, rather than the nominal expression denoting the object itself. This adverbial function is even clearer in (94), in which no ontological relationship of possession is implied.

- (93) a. *Kuo pau ke 'omai kiate au, pe tuku ma'aku*
 PERF must COMP bring DAT 1EX.SG or leave BEN_{SBJ}+1EX.SG
'i he 'ōfisi 'o e Palesitení.
 DAT SPEC office GEN_{OBJ} SPEC President-DA
 ‘It must be brought to me, or left **for me** at the President’s office.’
- b. *Ko e 'eiki eni na'e langa mo'ona 'a e fale lahi.*
 PRED SPEC chief this PAST build BEN_{OBJ}+3.SG ABS SPEC house big-DA
 ‘This is the chief **for whom** the big house was built.’
 (adapted from Churchward 1953:146-147)

- (94) *Ko hai te ne teka'i ma'atautolu 'a e maká*
 PRED who FUT 3.SG roll BEN_{SBJ}-1INC.PL ABS SPEC stone
mei he matapā 'o e fonualotó?
 FROM DET door GEN_{OBJ} DET tomb

“Who will roll away the stone from the entrance to the grave for us?”

(adapted from Ma'ake 16:3)¹⁰²

In Macdonald (2006, to appear), I proposed that the benefactive case-marker is a subtype of genitive case-marker in Tongan (noting the correspondence between *'al'o* and *ma'a/mo'o*), and hence that the benefactive pronouns are a subset of possessive pronouns. However, the grammatical relations evident in (93) and (94) suggest that the derivation of benefactive and possessive pronouns is not identical. For that reason, I am setting this analysis aside. I will return, briefly, to this problem in section 3.4.4.

3.2. Two Kinds of Possession

As noted in the introduction to this chapter, there are two genitive case markers in Tongan: *'o* and *'a*. These two case markers reflect a distinction widespread among Polynesian languages, which may be described roughly as encoding the ontological hierarchy between possessor and possessum and which has been discussed extensively in linguistic literature.¹⁰³ A possessor which is in some sense dominant over the possessum is case-marked with *'a*. A possessor

¹⁰²*Ma'ake* ‘Mark,’ refers to *Ko e ongoongolelei na 'e tohi 'e Ma'ake* ‘The gospel of Mark,’ as translated into Tongan by the Bible Society in South Pacific. Paraphrases for these texts come from the English translation (Today’s English Version) which accompanies the Tongan in the same publication. I have provided glosses based on Churchward’s *Dictionary* (1959).

¹⁰³To name but a few examples: Clark (1976), Wilson (1982), Taumoevalau (1996), Lynch (1997), Lichtenberk (1983, 2009), and the various authors in *STUF* 53(3/4) (2000).

which is subordinate to the possessum is case-marked 'o'.¹⁰⁴ This section examines the two types of possession more closely and proposes a formal syntactic representation.

3.2.1. *Subjective* and *Objective* Possession: Evidence from Nominalizations

One of the principal clues as to the nature of the 'a/'o distinction comes from the behaviour of arguments in nominalizations. In Tongan and other Polynesian languages, nominalizations are extremely common, and arguments of nominalized clauses may be realized as possessors. The choice of 'a or 'o as the possessive case marker of an argument in a nominalization is determined syntactically: If it is underlyingly the external argument of a transitive clause (A), as in (95), or the single argument of an intransitive clause (S), as in (96) and (97), regardless of its θ -role, is marked with 'a. If it is underlyingly the internal argument of a transitive clause (O), regardless of its θ -role, it is marked with 'o (98).¹⁰⁵ Because of the association of

¹⁰⁴Lichtenberk (1983, 2009) refers to analogous possessive markers in various Oceanic languages as *relational classifiers*, a subtype of possessive classifiers (see also Senft 2000:13ff) which encode the ontological relationship between the possessum and the possessor (whereas possessive classifiers in non-Oceanic languages, he claims, tend to be *sortal*, *i.e.* determined by noun class). As discussed in section 3.3, below, while the choice between 'a and 'o tends to reflect ontological characteristics of the possessor-possessum relationship, it is more-or-less grammaticalized such that the possessors of certain nouns are always marked with 'a, and those of others with 'o, regardless of the ontological relationship between the referents. As to the question of whether they might be analyzed as classifiers rather than case-markers, I am setting this aside for future research. Herein, I treat them as case-markers given their form, their position (preceding the possessor, rather than the possessum), despite the fact that they are grammatically determined by the possessor, and their interchangeability with other case-markers in nominalized clauses.

¹⁰⁵Churchward (1953:96-98) notes the following restrictions on the realization of arguments in nominalized clauses:

1. No more than one argument may be encoded as a possessor in a single nominalization.
2. Where both arguments are pronominal, the higher one (A) must be realized as a possessor (GEN_{SBJ}), and the lower one (O) as an absolutive argument.
3. Where only one argument is a pronominal, and the other is a lexical DP, the pronominal argument must be realized as a possessor, whether it is A or O. If the pronominal argument is A, it is realized as GEN_{SBJ} ; if it is O, it is realized as GEN_{OBJ} . The DP argument remains ergative if it is A, absolutive if it is O.

'*a* with ergative (S) and external absolutive (A) arguments and '*o* with internal (O) arguments in nominalizations, they are sometimes referred to in the literature as marking *subjective* and *objective* possessive (or genitive) cases, respectively (e.g. Churchward 1953, Dukes 1996), a convention which I adopt here.¹⁰⁶ Accordingly, I gloss '*a* as GEN_{SBJ} and '*o* as GEN_{OBJ}.

- (95) ...'i he'ene ma'u 'a e me'a'ofá
 DAT SPEC+GEN_{SBJ} +3.SG receive ABS SPEC gift
 '...at his receiving the gift.'

(Dukes 1997:88)

- (96) ko e 'alu 'a e tangatá
 PRED SPEC go ABS/GEN_{SBJ} SPEC man-DA
 'it is the man's departure'

(Tchekhoff 1981: 48)

- (97) he'ene 'alu
 SPEC+3.SG+GEN_{SBJ} go
 'his (/her/its) departure'

(FN:SVM 2006)

-
4. Where both arguments are lexical DPs, the higher one (A) must be realized as ergative, and the lower one (O) may be realized as absolutive or as GEN_{OBJ}. In the latter case, the lower argument immediately follows the noun (a defocused position according to Otsuka 2000).
 5. Pronominal possessors are obligatorily pre-nuclear (*i.e.* occurring in D⁰, according to the present analysis).

The association of optionally possessive arguments with the defocused position and the requirement that one pronominal argument be realized as a possessor suggest that possessive arguments are topicalized or defocused. This, in turn, might explain the restriction that only one argument may be realized as a possessor, despite the availability of two different possessive cases in the language. An exploration of this question may be valuable, but I am setting it aside for future research.

¹⁰⁶As will be discussed below, '*o* is preferred when a part-whole relation is denoted, with certain kinship terms, and when the possessum represents or characterizes the possessor (Churchward 1953:82). For this reason, Otsuka (2000) prefers to treat the '*a*/*o* distinction as alienable/inalienable. This also is consistent with the notion of objects as being internal and subjects as being external to the predicates with which they are associated.

(98) a. *Koe'uhi ko e fa'u 'o e ongo 'api*
 because PRED SPEC found GEN_{OBJ} SPEC DU institution-DA
'e he tu'i pē 'e taha
 ERG SPEC KING EMPH SBJV one
 'because of the founding of the two institutions by one and the same king'

b. ... *'i hoku 'uí 'e he 'eiki.*
 DAT SPEC+GEN_{OBJ}+1EX.SG call ERG SPEC chief
 '...when the chief called me'
 (*lit.* '...at my being called by the chief')

(adapted from Churchward 1953:98-99)

3.2.2. 'A and 'o with non-deverbal nouns: Flavours of n^0

In expressing the ownership of a concrete noun, the choice of 'a or 'o is fairly lexicalized; some nouns prefer possessors marked with 'a, and others prefer possessors marked with 'o. Churchward (1953:81-82) offers a loose generalization, saying that subjective possession is used with nouns denoting "goods, money, tools, utensils, instruments, weapons, vehicles [...], and gardens," as well as "animals or birds" which the possessor owns or uses, and those things which the possessor eats, drinks, or smokes; with things which originate from the possessor or which the possessor makes, mends, or carries; or with persons under the possessor's employ or in the possessor's care. He says that objective possession is used with nouns denoting things which are part of, or "so closely connected to [the possessor] that they almost seem to be parts of [him or her];" persons or things which represent the possessor; friends, relatives, associates, or enemies of the possessor; and things which are provided for the possessor.

To this generalization, however, Churchward (1953:82-85) notes numerous exceptions. For example, whereas the possessors of *koloa* 'goods,' *pa'anga* 'money,' and *hele* 'knife' are marked with 'a (subjective), those of *toki* 'axe,' *huo* 'spade,' and *kupenga* 'fishing-net' are marked with 'o (objective). Possessors of *me'aki* 'food,' *hu'akau* 'milk,' and *tapaka* 'tobacco' are marked with 'a, but those of 'oho 'provisions,' *inu* 'drinking water,' and *tī* 'tea'

are marked with *'o*. And whereas possessors of *kāinga* ‘relative,’ *foha* ‘(man’s) son,’ *'ofefine* ‘(man’s) daughter,’ are marked with *'o*, *motu'a* ‘parent,’ *tamasi'i* (child), and *tama* ‘(woman’s) son,’ are marked with *'a*. While the large number of exceptions suggest that the choice of *'a* or *'o* is conventional and idiomatic, Churchward also notes (1953:86) that there are nouns which may take *'a*- or *'o*-marked possessors depending on the relation between the possessor and the possessum. For example, *'ene lao* ‘his/her law (subjective)’ means ‘the law which he [or she] makes,’ and *hono lao* ‘his/her/its law (objective)’ means ‘the law by which he [or she] or it is governed.’

Because the distribution of *'a* and *'o* in nominalizations is (in some part) syntactically and semantically driven, and because of the flexibility of these case-markers with certain nouns, most of the authors who have examined the distinction have rejected the notion of a noun-class system and prefer to analyze the distinction semantically, in terms of control.¹⁰⁷ For instance, Wilson (1982) proposes a “initial control theory,” according to which *'a* denotes the possessor’s “control over the initiation of the possessive relationship” and that *'o* marks default possession.¹⁰⁸ Some authors have adopted this proposal or some variation thereof (*e.g.* Fischer 2000b, Hooper 2000, Næss 2000), whereas others prefer what Wilson (1982) calls “simple control” theories, in which the choice of *'a* or *'o* reflects the direct control (or lack thereof) of the possessum by the possessor (*e.g.* Harlow 2000). Wilson (1982) and these others all acknowledge, however, that there are regular exceptions to this rule – nouns that tend to take an *'a* or *'o* possessor regardless of the situation. Moyses-Faurie (2000:320) notes that, “...while these rules may suffice for Hawaiian, exceptions to them elsewhere require a

¹⁰⁷Here the term *control* is not used in the syntactic sense but as a descriptor of the ontological relationship between possessum and possessor.

¹⁰⁸ Wilson (1982:16-17) claims that this explains why certain pairs of familial relatives symmetrically *'a*-possess one another, whereas others symmetrically *'o*-possess one another, and yet others asymmetrically *'a*- and *'o*- possess one another. For instance, in Hawaiian, each of *kāne* (‘husband’) and *wahine* (‘wife’) is normally *'a*-possessed by the other (both spouses control the initiation of a marriage); each of *kai'kuana* (older brother) and *kaikaina* (younger brother) is *'o*-possessed by the other (neither initiates their relationship); and *keiki* (‘child’) is *'a*-possessed by its mother, but *makuahine* (‘mother’) is *'o*-possessed by her child (since a mother initiates the relationship with her child, but not the reverse).

number of complex explanations which are themselves in contradiction with data from other Polynesian languages,” and she claims that a “whole cluster” of semantic factors, including control, animacy, and voluntary or involuntary action contributes to the selection of *ʻa* or *ʻo*.

In her examination of the *ʻa/ʻo* distinction in Tongan, Taumoefolau (1996) takes a rather different approach, proposing that in *ʻa*-possession, the possessum is prototypically or metaphorically an “activity” and the possessor a “doer,” whereas in *ʻo*-possession, the possessum is prototypically or metaphorically a “part” or “property” and the possessor a “whole” or “totality.” While Bennardo (2000) calls this analysis “an important step towards an adequate treatment,” he develops another in which the central metaphor is a spatial one, with *ʻa*-possession indicating (metaphorical) motion of the possessum away from the possessed and *ʻo*-possession indicating (metaphorical) motion towards the possessed. Völkel (2010) surveys the various approaches and, while noting that none of them perfectly captures the semantic and pragmatic subtleties of the *ʻa/ʻo* distinction, she concludes that Wilson’s (1982) “initial control theory” is the most productive definition for Tongan.

Clearly, whatever is encoded by the *ʻa* or *ʻo* element in a possessive pronoun is difficult to capture as a single or constant semantic feature. A related problem is to determine whether it is *ʻa* or *ʻo* which is the marked variant, realizing this feature. Wilson (1982) proposes that it is *ʻa*-type possession, in which the possessor initiates the relationship with the possessum, which is marked, and that *ʻo*-possession, by default, realizes all other possessive relationships. Most of those who adopt his analysis, or variants thereof, seem to accept this generalization about their relative markedness. Clark (2000: 267), however, notes that where the total loss of the distinction has taken place, “the morphology of the surviving possessive forms seems to reflect the A [*ʻa*] set,” a situation which he describes as “interesting [...] for the perception that O [*ʻo*] is the unmarked member of the opposition.”

In Hawaiian, the primary language from which Wilson (1982) develops his analysis, *ʻo* does seem to function as a default possessive marker, marking the subjects of both transitive and intransitive nominalizations (as well as transitive objects). In Tongan, however, *ʻo*-possession

only marks transitive objects, whereas *'a*-possession marks both transitive and intransitive subjects, even when the verb is semantically unaccusative, as in *lavea* ‘get hurt.’ This, combined with Churchward’s (1953) observation that, among benefactives, the *ma'a* form is preferred “in neutral or doubtful cases,” suggests that, at least in Tongan, *'o* should be treated as realizing the marked possessive relationship; *'a*, the unmarked.

Example (99) illustrates the use of *'a* and *'o* to mark possessors of concrete nouns. In both cases, the possessor is the proper name *Sione*. As noted above, *pa'anga*, ‘money,’ is a noun which occurs with *'a*-marked (subjective) possessors (99a); *fale* ‘house,’ occurs with *'o*-marked (objective) possessors (99b).

- (99) a. *ko e pa'anga 'a Sione*
 PRED SPEC money GEN_{SBJ} Sione
 ‘Sione’s money’
- b. *ko e fale 'o Sione*
 PRED SPEC house GEN_{SBJ} Sione
 ‘Sione’s house.’

(adapted from Churchward 1953:111)

While it is likely that the choice of genitive marker in nominalizations is determined by structural factors (*'a* and *'o* are associated with external and internal arguments, respectively), in simple (*i.e.* non-deverbal) possession, there is no evidence for differing argument structures. Here, the choice of *'a* or *'o* is determined conceptually and is fairly lexicalized. I propose, therefore, that Tongan has two flavours of n^0 , corresponding to the two types of possession, which I will refer to as n_{SBJ} and n_{OBJ} (similar typologies have been noted for v , *e.g.* Arad (1999), who notes a distinction between agent- and experiencer-introducing v ; as well as Folli and Harley (2006), who distinguish between v_{DO} , which licenses only animate DPs, and v_{CAUSE} , which licenses both animate and inanimate DPs).

I propose that, just as Folli and Harley’s (2006) two flavours of v^0 are associated with different Θ -roles, so are the two flavours of n^0 . For want of more precise terms, I will call the

Θ -role associated with n_{SBJ} *possessor-subject* and that associated with n_{OBJ} *possessor-object*. Because there is evidence that n_{OBJ} is more marked than n_{SBJ} , I further propose that the former has a morphosyntactic feature [Θ_{OBJECT}]; the combination of genitive case and this feature is spelled out as 'o, while genitive case without featural specification is spelled out as 'a.

3.3. The Geometry of Tongan φ^0

Before further developing the analysis of the syntactic structures associated with possession in Tongan, I turn to the feature geometry of the φ^0 that is at the heart of each pronoun. In the preceding sections, I showed that the richness of the Tongan pronominal paradigms is largely due to their morphological and syntactic complexity. Because many of them are syntactically derived, they can contain a variety of heads, each encoding its own distinctions. For instance, as discussed above in section 3.2, Tongan distinguishes between two types of possession, each with its own genitive case particle; the inclusion of these particles in the surface form of both pre- and post-nuclear possessive pronouns doubles the size of these paradigms from 12 to 24 members each. Furthermore, we saw in Chapter 2 that there are four different basic determiners in Tongan, each with its own feature geometry; thus, the inclusion of D^0 within the spellout of pre-nuclear possessive pronouns further increases the size of that paradigm from 24 to 96. Nevertheless, even the simplest pronominal paradigms in Tongan are robust, due to the richness of the φ array. In this section, I direct my focus to φ^0 and examine its internal structure, proposing geometrical arrangements of its person (π) and number ($\#$) features. Table 12 summarizes the proposed geometry, which is developed below.

TABLE 12: Φ -FEATURE GEOMETRIES OF TONGAN PRO-FORMS

	Singular	Dual	Plural
3	Φ <i>ne</i>	Φ GROUP <i>na</i>	Φ GROUP EXTENDED <i>nau</i>
2	Φ PARTICIPANT <i>ke</i>	Φ / \ PARTICIPANT GROUP <i>mo</i>	Φ / \ PARTICIPANT GROUP EXTENDED <i>mou</i>
1 exclusive	Φ PARTICIPANT SPEAKER <i>u</i>	Φ / \ PARTICIPANT GROUP SPEAKER <i>ma</i>	Φ / \ PARTICIPANT GROUP SPEAKER EXTENDED <i>mau</i>
1 inclusive	Φ PARTICIPANT SPEAKER ADDRESSEE <i>te</i>	Φ / \ PARTICIPANT GROUP SPEAKER ADDRESSEE <i>ta</i>	Φ / \ PARTICIPANT GROUP SPEAKER EXTENDED ADDRESSEE <i>tau</i>

3.3.1. The geometry of number

I follow Cowper (2003, 2005) and Cowper and Hall (2005) in treating the plural as more marked than dual. While the interpretation of dual is 'exactly two,' its morphosyntactic feature, *GROUP*, simply indicates a number greater than one. The more restrictive interpretation results from the existence of a more marked member of the paradigm, the plural, which consists of the morphosyntactic features *GROUP* and *EXTENDED*, meaning 'more than two.'

Treating plural number as more marked than dual is somewhat controversial. Greenberg (1963) notes an implicational hierarchy among languages: If a language marks dual number, it also marks plural. Corbett (2000) and others invoke this to argue that dual is inherently more marked than plural. Harley and Ritter (2002), Harley (1994), and McGinnis (2005) all propose feature hierarchies for φ^0 in which this markedness in distribution is reflected in morphosyntactic markedness. Harley (1994) proposes a strict vertical hierarchy, in which *DUAL* is dependent on *PLURAL*, which in turn is dependent on *NUMBER*. In the model proposed by Harley and Ritter (2002) and adopted by McGinnis (2005), the features *MINIMAL* and *GROUP* are sisters, both dependent on *INDIVIDUATION* (equivalent to *NUMBER*). When both features are present, the interpretation is dual; when only *GROUP* is present, the interpretation is plural; and when only *MINIMAL* is present, the interpretation is singular.

In this model, *MINIMAL* is only active in languages that have a dual number. McGinnis (2005) notes that while Harley and Ritter (2002) do not specifically propose contrastive specification, they do assume that the interpretation of a set of morphosyntactic features is dependent on the other sets available. According to McGinnis (2005), the most specific meaning is assigned to the most complex set of features. Thus, in a language with dual number, the features [*MINIMAL*] and [*GROUP*], together, will be interpreted as 'dual,' and the feature [*GROUP*] alone can only be interpreted as 'plural' (3 or more). In a language without dual number, [*GROUP*] alone can be interpreted as any non-singular number. This is derived by what McGinnis (2005) calls the *subset principle*: Pronominal categories are assigned their interpretation in descending order of specification. The most specified category is assigned its

interpretation first; it can denote any set of individuals that is compatible with its features. Thereafter, the next–most specified category is assigned its interpretation, and it can denote any remaining set of individuals compatible with its features (that is, it cannot be assigned an interpretation that has already applied to a more-specified pronominal category). Thus, a dependency similar to that found in feature-geometric analyses is preserved, but the means of doing so is related to the process of interpretation rather than to implicational relationships amongst the features themselves.

However, the assumption that dual number is more marked than plural number is contested by Dryer (2005). He argues that appeals to Greenberg's (1963) implicational hierarchy are vacuous, since a language with a two-way singular/dual number system would still need to encode 'more than two' and, to do so, would have to choose between using the dual or the singular form. In the former case, the language would lose the dual-plural distinction, becoming a singular/plural language; in the latter, it would create a form meaning 'one or more than two' which, Dryer (2005) notes, is implausible.

Cowper (2003, 2005) and Cowper and Hall (2005) argue that since all languages with grammatical number distinguish between 1 and >1, and some further distinguish between >1 and >2, it is >2 which is the more marked value. They propose a strictly hierarchical geometry of number features, like that of Harley (1994), but in which the features denoting dual and plural are reversed, so that INDIVIDUATION dominates >1, which in turn dominates >2.

Cowper (2003) notes that the proposals presented above have different empirical implications regarding syncretisms: The models of Cowper (2003, 2005) and Cowper and Hall (2005) and of Harley and Ritter (2002) predict singular-dual and dual-plural but not singular-plural syncretisms; that of Harley (1994) predicts dual-plural and singular-plural but not singular-dual syncretisms.¹⁰⁹ Unfortunately, Tongan offers little data with which to test

¹⁰⁹Mathie (2014) presents evidence from Yakulta in favour of Cowper's (2003, 2005) and Cowper and Hall's (2005) claim that plural is more marked than dual.

the predictions, and the data which it does offer is inconclusive. Of the ten nouns and sixteen predicates listed by Churchward (1953) as having special dual and plural forms, five of the nouns and all of the predicates show dual-plural syncretisms, which are predicted by all three models; three of the nouns exhibit singular-dual syncretisms, which are predicted by Cowper (2003, 2005) and Cowper and Hall (2005) and by Harley and Ritter (2002); and one of the nouns exhibits a singular-plural syncretism, which is predicted by Harley (1994). The last noun has two forms, one of which is singular-dual and the other of which is dual-plural, a pattern which is difficult to account for with any of these models.

While syncretisms may not provide evidence in favour of one of these feature geometries of number, the morphology of the pronouns does suggest an answer: In every case, the plural pronoun appears to be more morphologically complex than its dual counterpart.¹¹⁰ In the φ^0 pronominal clitics and the φ roots of the genitive pronouns, every plural consists of the corresponding dual plus the vowel *u*.¹¹¹ Perhaps more tellingly, among the strong (post-verbal) cardinal pronouns, every plural consists of the corresponding dual plus *-tolu* ‘three.’ On this basis, I treat plural as more marked than dual in Tongan, and I thus adopt a feature hierarchy of number similar to that proposed by Cowper (2003, 2005) and Cowper and Hall (2005). Where I differ from them is in the nomenclature of the features; rather than >1 and >2 , I adopt the features **GROUP** and **EXTENDED**, respectively. If, in some languages, there is evidence for greater markedness of dual over plural, **EXTENDED** can be replaced in these languages with **MINIMAL**.

¹¹⁰But as Otsuka (p.c.) points out, phonological complexity does not necessarily imply morphological complexity.

¹¹¹It is arguable that the alternation is not between the presence and absence of *u* but between a simple vowel *a* and a diphthong, *au*. However, it has been argued (Anderson & Otsuka 2006, Taumoefolau 1996) that Tongan does not possess diphthongs phonemically, and that all apparent diphthongs are, in fact VV sequences in which stress falls on the first V. This is supported by the fact that when a suffix or phonological enclitic triggers a stress shift, so that the second vowel in the sequence is stressed, the two are articulated separately.

3.3.2. The geometry of person

Determining the correct hierarchy of person features is similarly complicated. There are various proposals for this in the literature, of which I present three here: Harley (1994), Harley and Ritter (2002), and Cowper and Hall (2005). I adopt Harley's (1994) features for Tongan.

Harley (1994) proposes that a four-way person distinction (one with an inclusive/ exclusive distinction) can be derived with three morphosyntactic features: PARTICIPANT distinguishes speech-act participants (first and second persons) from others (third persons). Among speech-act participants, SPEAKER distinguishes between parties which include the speaker (first persons) and those which do not (second persons). Among first persons, INCLUSIVE distinguishes between those which include the addressee (inclusive) and those which do not (exclusive). She argues for the greater markedness of SPEAKER and the treatment of INCLUSIVE as dependent on speaker on the grounds that when a language does not mark an inclusive-exclusive distinction, the denotation elsewhere associated with inclusive pronouns ('you and me') is always associated with first-person pronouns.

Harley and Ritter (2002) revise Harley's (1994) geometry using the features PARTICIPANT, SPEAKER, and ADDRESSEE. Again, PARTICIPANT distinguishes first and second persons from third persons, and the other features are dependent on PARTICIPANT. A language without an inclusive/exclusive distinction may have a marked SPEAKER feature, in which case a bare PARTICIPANT is interpreted as 'second person,' or a marked ADDRESSEE feature, in which case a bare PARTICIPANT is interpreted as 'first person.' In languages with an inclusive/exclusive distinction, both features are marked. When they appear together, the interpretation is 'inclusive.' A potential problem with this analysis, which they acknowledge, is that in languages with a four-way person system, it allows for a bare participant node (thus, arguably overgenerating distinctions). They argue that this is not, in fact, problematic: Most languages with this possible configuration do not make use of it. Those that do, such as Maxakali and Kwakiutl, lack number distinctions in all but the first-person pronouns. A bare PARTICIPANT is interpreted as first-person singular; one with the dependent feature SPEAKER

is interpreted as first-person exclusive non-singular; and one with dependent features SPEAKER and ADDRESSEE is interpreted as first-person inclusive non-singular.¹¹²

McGinnis (2005) adapts Harley and Ritter's (2002) model to capture the asymmetry between first and second persons. Specifically, she notes that in languages without an inclusive/exclusive distinction, inclusive is conflated with the first person, not with the second. On this basis, she proposes that SPEAKER is the primary dependent of PARTICIPANT, while second-person is the default interpretation of a bare PARTICIPANT node. In languages which do not make an inclusive/exclusive distinction, there is no feature ADDRESSEE; it is active only in those systems where it is needed for contrast, *i.e.* those with an inclusive/exclusive distinction. She thus rejects Harley and Ritter's (2002) claim that either of SPEAKER or ADDRESSEE can be the marked value in a language where both features are active. Like them, however, she proposes that when both features are present, they are conjoined as sister nodes, both immediate dependents on ADDRESSEE.

Cowper and Hall (2005) propose a modification to the geometry of person features proposed by Harley and Ritter (2002). Like the others, they propose that the inclusive first person is derived by the conjunction of two participants, a speaker and an addressee. Rather than have these two features co-occur as dependents of the same PARTICIPANT node, however, they propose that the inclusive has two PARTICIPANT nodes, one with the default interpretation (speaker or addressee, whichever is unmarked and therefore inactive) and the other with a marked dependent (SPEAKER or ADDRESSEE). This represents an improvement in that there is no need for a language to treat both SPEAKER and ADDRESSEE as marked values and thus to allow a bare PARTICIPANT node with no interpretation.

I set aside the person-feature model of Cowper and Hall (2005) for two reasons. The first is that the presence of two PARTICIPANT nodes seems to imply a minimum of two referents in

¹¹²Among Cowper and Hall's (2005) reasons for rejecting this analysis is that cross-linguistic semantic consistency of features is lost if in some languages there is no specification for SPEAKER feature, while in others it encodes exclusivity, and in still others it encodes plurality. Moreover, they argue that there is no empirical motivation for doing away with number features in Maxakali and Kwakiutl, as these languages in fact do encode grammatical number elsewhere.

the inclusive.¹¹³ This does seem to be borne out in many languages with dual number and an inclusive/exclusive distinction, wherein an inclusive dual pronoun refers to the speaker and two other people (two addressees, or another speaker and the addressee), and an inclusive plural pronoun refers to the speaker and three or more others (Donohue, Brown, Billings, p.c.; Harley & Ritter 2002), but in Tongan the first-person inclusive singular pronoun is used as a universal, or generic, pronoun, meaning “I (or me), or you, or anyone else,” as shown in (100), or as a polite equivalent of the first-person exclusive pronoun in deferential or formal language (Churchward 1953:127). Thus, first-person inclusive pronouns in Tongan do not encode more referents than their first-person exclusive counterparts, despite the representation of both the speaker and the addressee in the ϕ -feature geometry. Correspondingly, the first-person inclusive dual in Tongan refers to just two people – the speaker and the addressee – and the first-person inclusive plural refers to three or more people. The addition of a second PARTICIPANT node, as per Cowper and Hall (2005) is thus inconsistent with the Tongan data.

- (100) *'Oku 'ikai tonotu ke te tokanga pē kiate kita.*
 PRES NEG right COMP **1INC.SG** attend EMPH DAT **1INC.SG**
 ‘It is not right that **one** should attend only to **oneself**.’

(adapted from Churchward 1953:127)

I adopt here the model of Harley (1994), treating SPEAKER as the marked dependent of PARTICIPANT and INCLUSIVE as the marked dependent of SPEAKER. This model does not generate any unused configurations (such as the bare PARTICIPANT node in Harley and Ritter (2002)), nor does it make the incorrect (for Tongan) prediction that first-person inclusive pronouns will denote more referents than their exclusive counterparts (as does Cowper &

¹¹³ In many (or most) languages with an inclusive/exclusive distinction (Mark Donohue, Dunstan Brown, Loren Billings, p.c.), the first person inclusive singular denotes two referents – the speaker and one addressee; the first inclusive dual pronoun denotes three referents – the speaker and two addressees, etc. Whether the difference between this system and that of Tongan denotes different interactions between person and number features or merely a different pragmatic application of the available distinctions is unclear.

Hall (2005)). While I recognize that this model may be problematic for some languages, it elegantly captures the facts of Tongan.

3.4. The syntax of possession

As noted in the introduction to this chapter, there are two available spell-out positions for possessors in Tongan: pre-nuclear and post-nuclear. The most common position for a possessive pronoun in a nominal expression is pre-nuclear, and it may be doubled by its post-nuclear counterpart, usually for emphasis (Churchward 1953:142), as in (101a). It is uncommon, although possible, for a post-nuclear possessive pronoun to occur without a pre-nuclear one (101b). According to Churchward (1953:142), this also yields an emphatic reading.

- (101) a. *hoku* *loki* (*'o'oku*)
 SPEC-GEN_{OBJ}-1EX.SG room GEN_{OBJ}-1EX.SG
 ‘**my/my** room’ (emphatic if the lower copy is pronounced)
- b. *he loki 'o'oku*
 SPEC room GEN_{OBJ}-1EX.SG
 ‘**my** room’ (emphatic)

(adapted from Churchward 1953:143)

Lexical possessors, on the other hand, are always post-nuclear (102), and they are always preceded by a case-marking particle (*'a* or *'o*).

- (102) *Ko e tu'i 'o e fonu'a*
 PRED SPEC king GEN_{SBJ} SPEC country-DA
 ‘the king **of the country**’

(adapted from Churchward 1953:101)

Churchward (1953: 135) notes that pre-nuclear possessive pronouns occasionally occur with co-referential lexical possessors but that this is restricted to third-person singular, genitive-objective pronouns, even when the possessor is plural. He provides four examples including those in (103), but I have been unable to find any others in the literature.

(103) a. *hono uHINGA 'o e fo'i lea¹¹⁴ ko eni.*
 SPEC+GEN_{SBJ}+3.SG meaning GEN_{OBJ} SPEC word PRED this
 'the meaning of this word'
 (*lit.* 'its meaning of this word')

b. *hano alea'i 'o e ngaahi tangi*
 NONSPEC+GEN_{OBJ}+3.SG discuss GEN_{OBJ} SPEC PL petition-DA
 'a discussion of the petitions'
 (*lit.* 'its discussion of the petitions')

(adapted from Churchward 1953:133-134)

The structures I propose for pre- and post-nuclear possessors are shown in the figures below. Figure 7 corresponds to (102); Figure 8, to (101b); and Figure 9, to (101a).

¹¹⁴*Fo'i lea*, paraphrased here as 'word,' can be parsed as *fo'i* 'fruit-of' (Churchward 1959:197), an individuating nominal aspect marker, and *lea* 'speech' or 'to speak' (Churchward 1959:284).

FIGURE 7: POST-NUCLEAR LEXICAL POSSESSOR

he tu'i 'o e fonu'a
 SPEC king GEN_{OBJ} SPEC country
 'the king of the country'

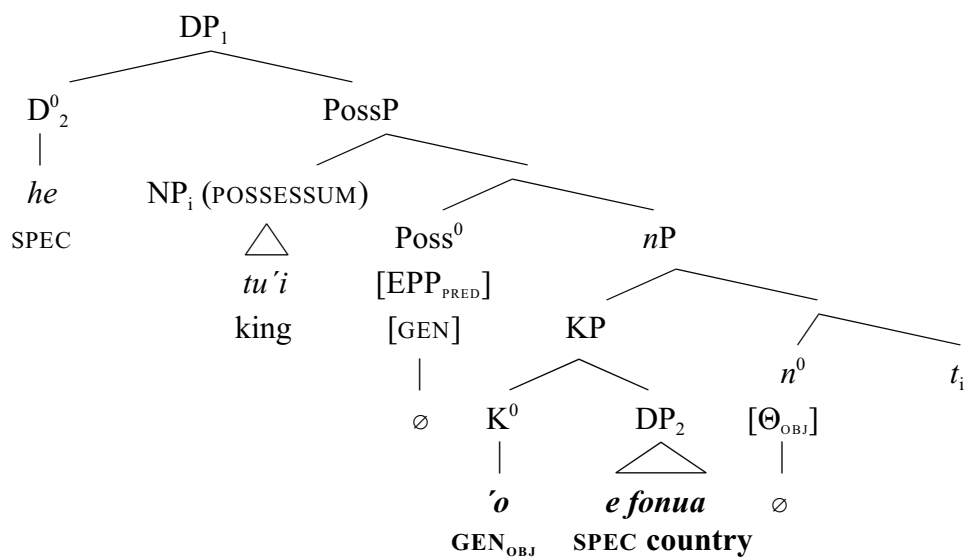
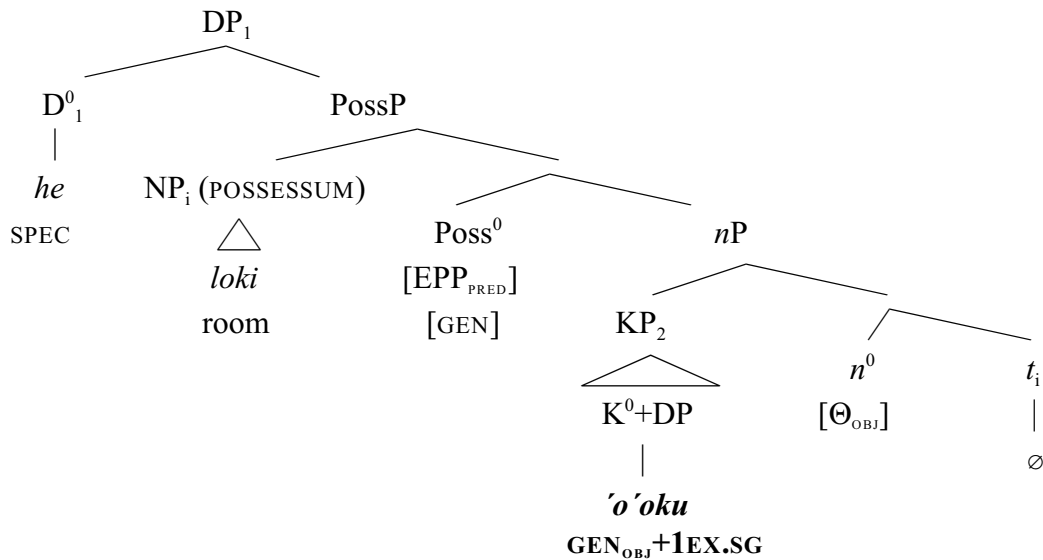


FIGURE 8: POST-NUCLEAR POSSESSIVE PRONOUN

he loki 'o'oku
 SPEC room GEN_{OBJ}+1EX.SG
 'my room' (emphatic)



emphatic). This movement of a clitic particle from [Spec, *n*P] to D⁰, coupled with the predicate-fronting of the possessum from [Comp, *n*⁰] to [Spec, PossP], discussed in section 3.4.1, below, derives another apparent long-distance relation – that between the pre-nuclear possessive pronoun in the left periphery and its post-nuclear counterpart.

This analysis bears a significant resemblance to that of Kahnemuyipour and Massam (2006) for Niuean possessive constructions. As in Tongan, pronominal possessors in Niuean can pre- or post-nuclear. However, pre-nuclear possessors are not restricted to reduced pronouns as they are in Tongan. Pre-nuclear possessors may be unreduced possessive pronouns, identical to their post-nuclear counterparts, or they may be proper (but not common) DPs (Kahnemuyipour & Massam 2006). The only formal difference, aside from the order of constituents, is the presence of a possessive particle preceding the possessum when the possessor is pre-nuclear and the absence of such a particle when the possessum is post-nuclear, as shown below in (104):

(104) Niuean:

- a. *e* *ha Sione a leo*
 ABS.C¹¹⁵ GEN **Sione** *a* voice
 ‘Sione’s voice.’
- b. *e* *leo ha Sione*
 ABS.C voice GEN **Sione**
 ‘Sione’s voice.’

(Kahnemuyipour & Massam 2006:158)

The ability of proper DPs in Niuean to appear as pre-nuclear possessors, coupled with the fact that possessor-doubling does not occur, supports a fully movement-based analysis for that language, rather than a cliticization analysis such as I propose for Tongan. Kahnemuyipour

¹¹⁵Unlike Tongan, Niuean exhibits a proper-common distinction in nouns; pre-nominal particles (such as case, number, and aspectual-type markers) vary in form depending on the proper/common status of the head noun. In this example *e*, glossed ABS(OLUTIVE).C(OMMON), marks absolutive case and indicates that *leo* ‘voice’ is a common noun.

and Massam (2006) propose that the alternation between pre- and post-nuclear possessors is a consequence of the presence or absence of the particle *a* in Poss^0 . When it is present, it blocks the DemP containing the possessum from moving leftward and thus results in a pre-nuclear possessor. When it is absent, DemP moves into [Spec, DP], yielding a post-nuclear possessor.

My analysis of Tongan possessive structures is similar to Kahnemuyipour and Massam's (2006) analysis of the corresponding phenomenon in Niuean in that both analyses posit a PossP between the determiner and the possessum, and Poss^0 assigns genitive case to the possessor. In Kahnemuyipour and Massam (2006), however, the possessum either moves into [Spec, DP] (not an instance of predicate-fronting, but one of a series of roll-up movements) or stays in its merge position of [Comp, Poss^0]. Moreover, in their analysis, the possessive particle in Poss^0 is distinct from the genitive case-marker, and n^0 is not involved in the licensing of the possessor argument (the possessor is merged, and remains, in Spec, PossP).

3.4.1. Predicate-fronting of possessors

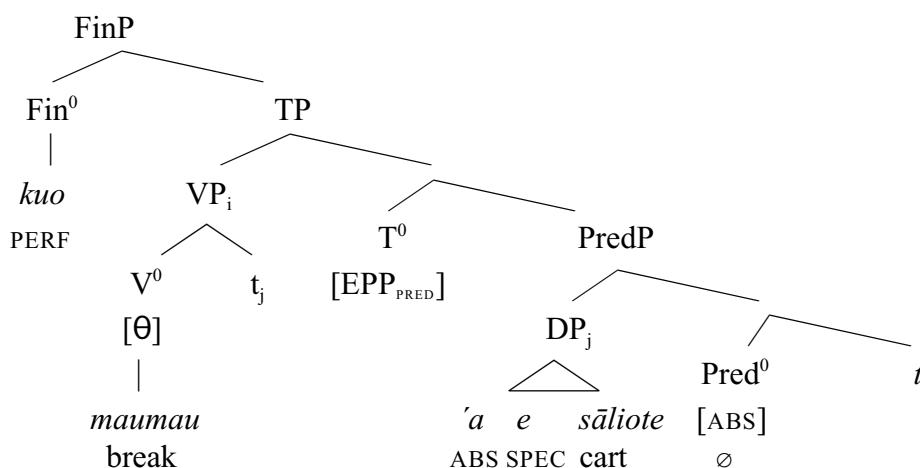
In the above structures, I am adopting the widespread assumption that possessive constructions are predicative – the possessor is the subject and the possessum is the predicate (see, *e.g.* Abney 1987, Kayne 1994). Structurally, this results from the projection of $n\text{P}$, which licenses an external argument (the possessor). Whether this argument is merged in [Spec, $n\text{P}$], as when it is a lexical DP, or in n^0 , as when it is a pronoun, its case feature is checked against the [GEN] feature of n^0 . Morphologically, genitive case is spelled out as a pre-nuclear particle with lexical possessors (*'o*, in the above examples) or as part of a possessive pronoun.

An analogy can be drawn between intransitive clauses, shown below in Figure 10,¹¹⁶ and possessive nominal expressions in Tongan, in which *nP* is the analogue to *vP*. Like *vP*, it licenses an argument (the possessum). I adopt a version of Bowers' (2002) split-*vP* hypothesis (Macdonald 2006, to appear); thus, Pred^0 is used in Figure 10 as a variant of v^0 , and the analogy being drawn is between n^0 and Pred^0 .

FIGURE 10: INTRANSITIVE CLAUSE STRUCTURE (MACDONALD 2005; 2006A,B)

Kuo maumau 'a e sālioté
 PERF break ABS SPEC cart-DA
 'The cart has broken.'

(Dukes 1996:87)



¹¹⁶As outlined in Macdonald (2005a,b; 2006; to appear) I assume an expanded CP following Rizzi (1997) and a modified version of Bowers' (1993) split-*vP* hypothesis. Force^0 (not shown) is the locus of the complementizer, if one is present. Fin^0 is the locus of the tense-aspect-mood particle (TAM) (see Ball 2008:110-116 for argumentation that TAMs are not complementizers). If a clitic "subject" pronoun is present, it is adjoined to the TAM in Fin^0 (see section 3.5 for discussion). Similarly, the core of Bowers' (2002) proposal is that *vP* is not a single projection but two – $\text{Pred}(\text{icate})\text{P}$ and $\text{Trans}(\text{itive})\text{P}$. In Macdonald (2003, 2006), the order of TransP and PredP is reversed; TransP , when present, dominates PredP , licenses the second argument, and checks ergative case. PredP is always present, licenses the first argument, and checks absolutive case.

This analogy can be extended to PossP and TP and to predicate-fronting in the two structures. To account for predicate-fronting in Tongan, Macdonald (2003; 2005a,b; 2006) follows Massam and Smallwood (1997), Massam (2001, 2005), and Kahnemuyipour and Massam (2006), who propose the following for Niuean: After the arguments have checked case, the VP remnant – that is, what remains of the VP after its internal argument has evacuated for case-checking – moves to [Spec, TP] to check an $[EPP_{\text{PRED}}]$ feature. Adopting this analysis here, I assume that predicate-fronting derives the V-initial word-order common to Tongan and Niuean.¹¹⁷

The primary evidence for predicate-fronting at the clause level comes from the fact that internal arguments which are smaller than DP and thus do not evacuate VP for case remain adjacent to the verb in its fronted position (105), a phenomenon known as Pseudo-Noun-Incorporation (PNI), which was first identified by Massam (2001) in Niuean and elaborated on in Tongan by Ball (2005a,b; 2008).¹¹⁸ Note that this differs from ordinary incorporation of a noun into V^0 in that the arguments that front with the predicate are phrasal, containing modifying adjectives (105a), noun conjuncts (105b), and other PPs (105c).

- (105) a. *Na'e tā kita fo'ou 'a Sione.*
 PAST **hit guitar new** ABS Sione
 'Sione **played new guitars.**'

¹¹⁷But see Otsuka (2000, 2005a) for another analysis. She proposes that V-initial ordering in Tongan is derived via successive head movements of V-to-T and T-to-C. I adopt a VP-fronting analysis here, but little in this dissertation relies upon it.

¹¹⁸Ball (2008) and Otsuka (2005a), however, note a number of differences between Niuean PNI as described by Massam (2001a,b) and apparent PNI in Tongan. Among other things, the incorporated nominal in Tongan cannot contain finite relative clauses, universal quantifiers, possessors, or prenominal adjectives (Ball 2008). Ball (2008) argues for a model in which derivational morphology partially detransitivizes a verb, rendering it semantically transitive but syntactically intransitive, and he suggests that the apparent phrasality of the incorporated nominal is due either to N^0 incorporating modifiers or to modifiers of the derived compound V^0 being able to “see” inside it and scope over only the incorporated element. Otsuka (2005a) argues for something like the first of these possibilities, suggesting that the verbal complex in apparent PNI results from recursive compounding; this analysis seems difficult to reconcile with the fact that not just adjectives but also certain PPs can be included in the incorporated nominal as in (105b,c).

- b. *Na'e tō manioke mo e talo 'a Sione*
 PAST **plant cassava with SPEC taro** ABS Sione
 'Sione **planted cassava and taro.**'
- c. *Na'a fakama'a sea 'o fale 'a Sione*
 PAST **clean chair** GEN_{OBJ} **house** ABS Sione
 'Sione **cleaned house chairs.**'

(Ball 2008:259)

In possessive nominal expressions, the analogue to TP is PossP. Once the possessor has been merged in [Spec, *n*P] and has received genitive case from Poss⁰, the possessum (maximally #P, minimally NP) moves to [Spec, PossP] to check [EPP_{PRED}], just as a VP remnant moves to [Spec, TP] for the same purpose.

It may be possible to find similar evidence for the phrasality of the fronted possessive predicate. Certainly, adjectives and numerals can intervene between the head N⁰ of the possessum and the post-nuclear possessor, as in (106):

- (106) *he tēpile faka'ofa'ofa 'e nima 'a Sione*
 SPEC table **beautiful** SBJV **five** ABS Sione
 'John's five beautiful tables.'

(FN: LMK 2009)

The problem, however, is that significant scrambling is allowed within Tongan nominal expressions, as can be seen in (107), below, in which my consultant accepts all three word orders. Even when pressed, she indicates that there is no difference in meaning among them.

- (107) a. *he tama'iki 'e tokotolu faka'ofa'ofa 'o Sione*
 SPEC boy SBJV **CLS-three beautiful** GEN_{OBJ} John
 'John's three beautiful boys'
- b. *he tama'iki fakafa'ofa 'e tokotolu 'o Sione*
 SPEC boy **beautiful** SBJV **CLS-three** GEN_{OBJ} John
 'John's three beautiful boys'

- c. *he tama'iki faka'ofu'ofu 'o Sione 'e tokotolu*
 SPEC boy **beautiful** GEN_{OBJ} Sione SBJV CLS-three
 ‘John’s three beautiful boys’

(FN: LMK 2009)

More research is needed to establish the default position of the post-nuclear possessor relative to other post-nominal elements. Little relevant data is available in the existing literature on Tongan. Thus, while there does seem to be some evidence from the order of elements within nominal expressions to support the notion that predicate-fronting is the mechanism behind the leftward movement of the possessum, more research is needed to confirm this.

Despite the significant degree of parallelism between the architectures of nominal expressions and clauses in Tongan, the analogy is not perfect. The most significant difference between clause-level predicates and possessor predicates is in which head is responsible for case assignment. In this analysis, Poss⁰ assigns case in nominal expressions and Pred⁰ does so in clauses, although structurally Poss⁰ is the analogue of I⁰ (which essentially does not interact with arguments at all), and the analogue of Pred⁰ is *n*⁰ (which licenses an argument and supplies a possessive Θ -role, but does not assign case).

In an intransitive clause, the argument is merged in [Spec, PredP].¹¹⁹ Pred⁰ probes its domain for a [D] feature; not finding one, it extends its search domain upward (again, I assume cyclic Agree as articulated by Béjar and Rezac (2009)) and finds the argument within its specifier. Since the argument, being a DP, satisfies the probe, Pred⁰ and the DP in [Spec, PredP] enter an Agree relation. Pred⁰ thus assigns values the [*u*CASE] feature of this DP, essentially assigning absolutive case to it.

¹¹⁹I compare the derivation of possessive structures here to that of unergative clauses, because possessors are generally thought to be analogous to external arguments (as nouns do not normally assign Θ -roles to their arguments). Otsuka (2000:176-179) notes that the vast majority of intransitive verbs in Tongan are unergative. An unaccusative derivation would differ from the unergative one given here only in that Pred⁰ would find its goal in the internal argument of VP and, having an EPP_D feature, would cause this argument to move into [Spec, PredP]. It seems that Pred⁰ must have an EPP_D feature regardless, since transitive verbs do have internal arguments, and these also receive absolutive case in [Spec, PredP].

In a possessive nominal expression, the possessor is likewise merged directly in [Spec, *nP*], where it receives a possessive θ -role (POSS_{SUB} or POSS_{OBJ}) from n^0 . However, genitive case is not assigned by n^0 but by the immediate c-commanding head, Poss^0 . Since the relation between Poss^0 and [Spec, *nP*] is local, and Poss^0 lacks an EPP[D] feature (recall that, as the analogue to I^0 , it has an EPP[Pred] feature instead), the possessor remains *in situ*.

A further exclusion from the analogy is found in the cliticization behaviour of verbal arguments and possessors. While both are deficient pronouns spelled out in left-peripheral heads and are in a long-distance relations with a co-referential element on the right, cliticization in these two structures occurs under different conditions. Verbal-argument (subject-like) clitics are much smaller than possessive clitics; they are ϕ^0 which adjoin to Fin^0 but do not pass through an intervening head and thus do not appear at spellout with an element equivalent to the genitive case-particle that appears with pre-nuclear possessives. The similarities and differences between the two types of argument-cliticization in Tongan are explored more thoroughly in section 3.5.

3.4.2. Cliticization to D^0

Analyzing the derivation of pre-nuclear possessive pronouns presents a number of possibilities and challenges. In principle, the presence of ϕ -features in D^0 could result from agreement, head-movement, or cliticization of a pronoun; or they could be base-generated as specifiers of D^0 and undergo metathesis at spell-out. However, the data present serious challenges to all of these analyses. I propose a cliticization analysis based on Uriagereka (1995) that involves both Agree and head-movement, resulting in a somewhat unconventional-looking, morphologically complex clitic in D^0 .

Evidence against a straightforward agreement analysis comes from the apparent optionality of D^0 possessive pronouns and the fact that they do not normally occur with lexical possessors. If they were derived via valuation of unvalued ϕ -features on the determiner, via agreement

with a post-nuclear possessor, they should be mandatory (whether the possessor is lexical or pronominal). This is not, however the case: Rather, they seem to be nearly mandatory with pronominal, post-nuclear possessors and only marginal with lexical ones. With lexical possessors, these pronouns are acceptable only in cases of objective (‘*o*-type) possession, and they mark only (third) person, never number.

On the other hand, the fact that these pronouns occasionally co-occur with lexical possessors poses serious problems for a left-dislocation or scrambling analysis, even if pronominal doubling could be accounted for by optional deletion of the trace. A further problem for such an analysis comes from the structural deficiency of the pre-nuclear pronouns relative to their post-nuclear counterparts; if the latter were simply a lower copy of the former, they should be isomorphic.

A base-generation analysis (whereby the pre-nuclear pronouns are base-generated in [Spec, DP]) is also problematic because of the structural deficiency of these pronouns and because they contain a case-particle. There would have to be two case positions available for possessors within a single DP – one pre-nuclear and one post-nuclear. While that might seem reasonable given that there are two types of possession in Tongan – one might correspond to an internal possessor and the other to an external possessor – it would predict that where pre- and post-nuclear pronouns co-occur, one must be case-marked with ‘*o* and the other with ‘*a*, and they may refer to different entities. In fact, neither of these predictions is borne out: Both must have identical case-markers, and they must be co-referential. This suggests that there is only one case position and one theta-position for a possessor within DP.

The presence of the case-particle in these pronouns is not only problematic for the base-generation analysis. It is problematic for an agreement-based analysis because case does generally participate in Agree relations (Adger & Harbour 2008:2). It is problematic for a cliticization analysis, as well, as it seems to violate Kayne’s Generalization (Agnostopoulou 2007:521, citing Jaeggli 1982, who attributes it to Kayne), which states that clitic doubling is only possible when there is a special particle available to license the doubled element; this

generalization is generally taken as evidence that clitic pronouns absorb case (Agnostopoulou 2007) or are arguments that check case (Wali & Koul 1994), thus necessitating a preposition for case-assignment to the doubling element (Agnostopoulou 2007). In Tongan possessive nominal expressions, genitive case seems instead to proliferate: A genitive case-marker is directly adjoined to the clitic, and an identical case-marker precedes its double.

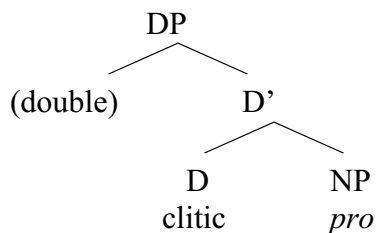
In the proposal I develop below, the genitive particle may appear simultaneously in two places, because it is associated with two separate heads with similar features but different functions. In $Poss^0$, it is a head that encodes a specific type of possessive relation; in K^0 (within [Spec, nP]) it is the morphological realization of genitive case on an argument. When the two heads are adjacent, as they are in a post-nuclear possessor, they undergo fusion, a morphological operation whereby the features of adjacent heads are fused and spelled out with a single vocabulary item (Halle & Marantz 1994:277),¹²⁰ thus, only a single instance of the genitive particle is spelled out, instantiating both $Poss^0$ and K^0 . When they are separated, as in the derivation of genitive determiners, the loss of linear adjacency prevents fusion, and the particle appears both in $Poss^0$ and within the K^0 clitic.

The basis for this proposal is the approach to clitic doubling found in Uriagereka (1995) and Roberts (2010), whereby clitics and their doubles are merged as formally identical heads within the same complex pronominal. Both Uriagereka (1995) and Roberts (2010) examine doubling, specifically of object clitics, in Romance languages. In these languages, third-person clitics are formally identical to determiners. In Uriagereka's (1995) proposal for Spanish and Galician, shown in Figure 11, the clitic (a definite determiner), is merged in D^0 and moves leftward to a position adjoined to F^0 , leaving its double behind, which is spelled out as a pronominal (in [Spec, DP]) (p. 101). Roberts' proposal (Figure 12) is similar but involves a more elaborate DP structure. Here, the clitic *la* is merged in φ^0 ; its features are copied to D^0 via Agree, generating la_φ . The clitic la_φ is then moved leftward to ν^0 .

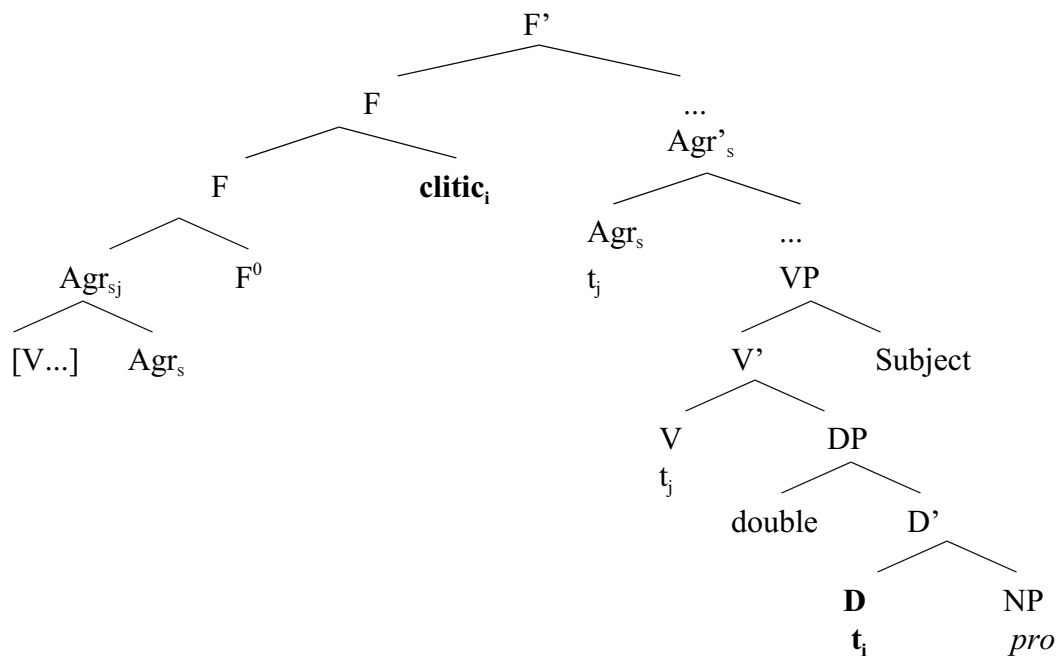
¹²⁰This is also evocative of lexical sharing, a mechanism from LFG whereby one lexical item is associated with two terminal nodes (Wescoat 2002). See also Cowper & Hall (2012b) for a derivation of English *a(n)*, which spells out both (singular) $\#^0$ and (indefinite) D^0 .

FIGURE 11: CLITIC DOUBLING IN GALICIAN AND SPANISH (URIAGEREKA 1995)

A. INTERNAL STRUCTURE OF 3P CLITICS

(Uriagereka 1995:81)¹²¹

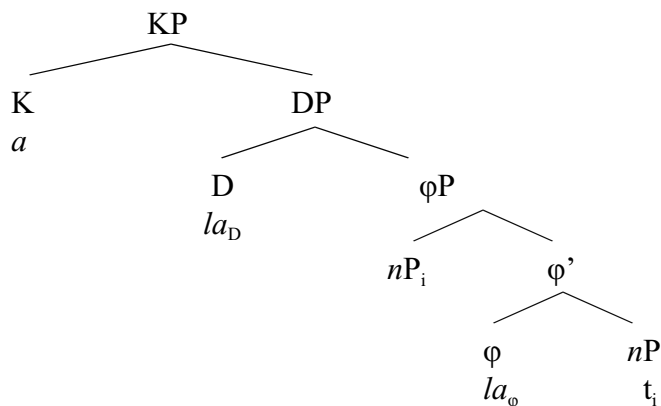
B. CLITIC MOVEMENT

(adapted from Uriagereka 1995:101)¹²²

¹²¹The clitic determiners and their strong pronominal counterparts are formally identical throughout the paradigm in Galician but distinct in (standard) Spanish. Uriagereka (1995:81) proposes that clitics and strong pronouns are related, both synchronically and diachronically, throughout Romance. Third-person clitics, which are weak in his analysis, are determiners which introduce *pro*. First- and second-person clitics, which are strong, are DPs and thus do not introduce *pro*.

¹²²This structure is for a V-fronting Romance language with subject agreement and enclitic objects. The verb moves to Agr_s for subject agreement and then is lexically incorporated to F^0 (Uriagereka 1995:99), a head which “syntactically encodes a speaker’s or an embedded subject’s *point of view*” (p. 93, emphasis his).

FIGURE 12: INTERNAL STRUCTURE OF ROMANCE 3P CLITICS (ROBERTS 2010)

(Adapted from Roberts 2010:134)¹²³

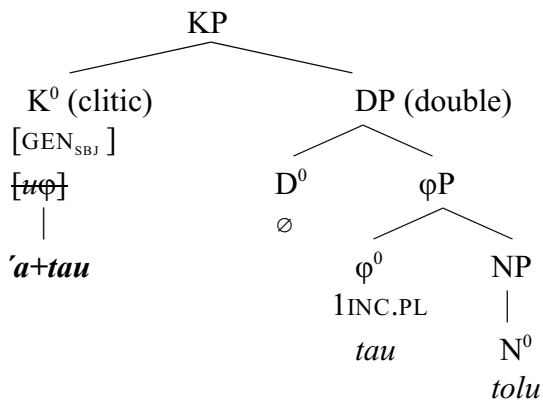
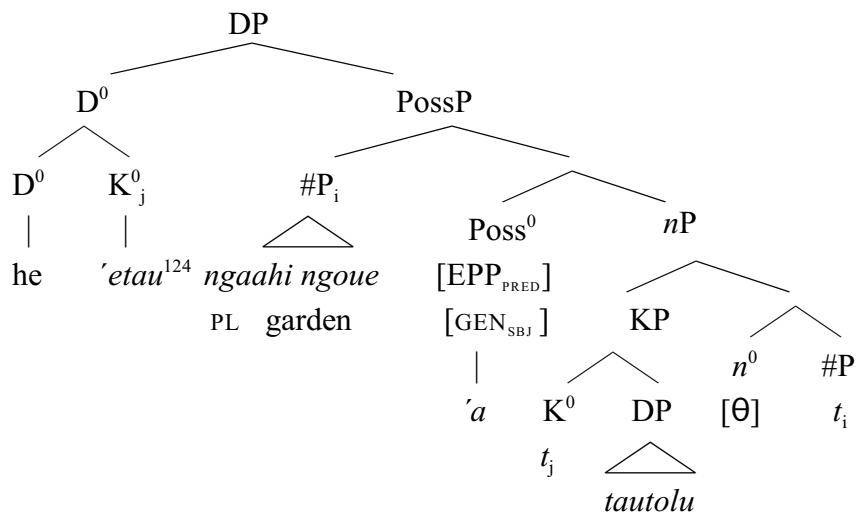
My analysis of Tongan possessive clitic pronouns borrows from Uriagereka (1995) and Roberts (2010) the notion that clitic pronouns and their doubles are merged within the same argument projection, and then the clitic moves leftward to a higher projection. My analysis further shares with Roberts (2010) the idea that clitic pronouns are merged with underspecified ϕ -features, and that, before the clitic moves, these features are specified via Agree with a lower, pronoun-internal, ϕ^0 . As noted above, however, possessive determiners in Tongan include a case particle. Adapting Roberts' (2010) proposal to account for this, I propose that clitic portion of the Tongan possessive pronouns is generated in K^0 , as illustrated in Figure 13a. The movement of K^0 to D^0 is illustrated in Figure 13b. These diagrams correspond to the phrase *he'etau ngaahi ngoue 'atautolu* 'our own gardens.'

¹²³Roberts (2010:84) presents this in bracketed notation as $[_{KP} a [_{DP} [_{D} la] [_{\phi P} [_{nP} ni\tilde{n}a] [_{\phi} la] (nP)]]]$; Figure 12 is my rendering of it. Note that the object-clitic *la* (3.SG.FEM) is doubled by the DP *la niña* 'the child.'

FIGURE 13: GENERATION OF POSSESSIVE DETERMINERS IN TONGAN

he'etau *ngaahi ngoue 'atautolu*
 SPEC+GEN_{SBJ}+1INC.PL PL garden GEN_{SBJ}+1INC.PL+PL
 'our own gardens'

(adapted from Churchward 1953:143)

A. GENERATION OF GENITIVE CLITICS IN K⁰B. CLITICIZATION OF GENITIVE CLITIC TO D⁰

¹²⁴Note that the first vowel of the clitic undergoes assimilation here to the final vowel of its D⁰ host. Thus, while the clitic is underlyingly *'etau*, the pronoun that is generated when it is cliticized to *he* (SPEC) is *he'etau*.

As seen in Figure 13a, K^0 is merged with uninterpretable ϕ -features, which are valued against ϕ^0 in its complement, via Agree. I assume, following Torrego and Pesetsky (2004) that Agree results in the replacement of unvalued/uninterpretable features of the probe with a copy of the corresponding valued/interpretable features of the goal; the result of Agree is that the features of the probe become valued, thus interpretable, thus suitable as goals for a higher probe.¹²⁵

Thus, the valuation of the ϕ -features of K^0 generates a clitic pronoun with interpretable ϕ -features. As seen in Figure 13b, this clitic then undergoes incorporation to the higher D^0 . While this resembles a non-canonical head movement, in that K^0 bypasses Poss^0 , Roberts (2010) argues that cliticization is triggered by Agree, and thus subject to the same locality and anti-intervention effects as other Agree relations. Assuming this to be correct, I propose that the cliticization of K^0 to D^0 here is triggered by ϕ -Agreement: The higher D^0 is merged with uninterpretable ϕ -features, and thus the closest appropriate goal is the clitic in K^0 .

According to Roberts (2010), Agree results in incorporation when the formal features of the goal are a proper subset of those of the probe. Adopting this here presents a challenge, since it would require that the higher D^0 contain a [CASE] (or perhaps [GENITIVE]) feature. As noted previously, case is generally not considered to be a feature of probes (Adger & Harbour 2008:2, Roberts 2010:57). I propose that the case feature of the higher D^0 is unrelated to its probe and is simply a feature requiring the higher DP to be case-marked in its sentential context. Its relevance to the incorporation of K^0 is simply that K^0 's formal features ($[i\phi]$, $[i\text{CASE}]$) are a subset of D^0 's ($[u\phi]$, $[u\text{CASE}]$, $[iD]$), and this allows K^0 to be incorporated to D^0 .

¹²⁵Note that although Roberts (2010) proposes that the complement of the clitic moves to its specifier following the first Agree operation, I am not including this movement in my proposal for genitive clitics in Tongan. While roll-up of movement is seen throughout the Tongan DP, as described elsewhere in this dissertation, case-markers in Tongan consistently appear to the left of their complement DPs. Movement of the post-nuclear pronoun from [Comp, K^0] to [Spec, KP] would be vacuous here.

3.4.3. Possessive determiners with lexical possessors

Another unusual pattern occurs in Tongan, in what Churchward (1953:133-134) refers to as the *anticipative* use of the possessive pronouns *hano* and *hono*. Here, a third-person singular, objective-possessive determiner (*hano* is nonspecific, and *hono* is specific) occurs in a nominal expression with a lexical possessor. Churchward (1953) does not discuss the meaning of this usage but notes (p. 133) that it occurs “often [...] when English speakers would naturally just expect a definite or indefinite article.” He illustrates this with four examples, including the two in (103), repeated here as (108):

(108) a. *hono* *'uhinga 'o e fo'i lea ko eni.*
 SPEC+GEN_{OBJ}+3.SG meaning GEN_{OBJ} SPEC word PRED this
 ‘the meaning of this word’
 (*lit. its meaning of this word*)

b. *hano* *alea'i 'o e ngaahi tangi*
 NONSPEC+GEN_{OBJ}+3.SG discuss GEN_{OBJ} SPEC PL petition-DA
 ‘a discussion of the petitions’
 (*lit. its discussion of the petitions*)

(adapted from Churchward 1953:133-134)

That this construction is limited to third-person pronouns is unsurprising, given that lexical NPs are inherently third persons. It is interesting, however, that it only occurs with singular possessive pronouns, even when the possessor is non-singular. Furthermore, it is limited to expressions of objective possession, which – as noted in section 3.2, above – is sometimes treated as inalienable possession and has semantic similarities with it. Given the paucity of such examples in the existing literature, this phenomenon is best set aside for future research. However, I will propose, tentatively, that these deficient possessive determiners are generated differently from the cliticization described above.

Note that there are no ϕ -features associated with the pre-nuclear possessive pronoun when the post-nuclear possessor is a lexical DP, even if it is plural. This suggests that in these instances, ϕ -Agreement has not taken place. Instead, *'a* or *'o* – without ϕ -features – has been

incorporated to D^0 , yielding a third-person singular possessive determiner, the most unmarked of the possessive pronouns. I suspect that this incorporation is due to the inalienable nature of 'o-possessive relations. It is also worth noting that in the examples in (108), the possessors seem to be syntactic complements of the possessa.

3.4.4. Benefactive pronouns revisited

In section 3.1.6, I noted the existence of a series of benefactive pronouns in Tongan. Formally, they are nearly identical to the post-nuclear possessive pronouns, but the possessive case-marking particle 'a or 'o is replaced with be benefactive *ma'a* or *mo'o*, respectively, and the benefactive relation holds not between two nominal expressions but between a nominal expression (realized by the pronoun) and a VP. In earlier work (Macdonald 2006, to appear), I adopted Clark's (2000:262) proposal that the benefactive marks a kind of "irrealis possession" and proposed a feature [POTENTIAL], dependent on $Poss^0$, deriving *ma'a* and *mo'o*. This analysis, however, did not take into account the adverbial external syntax of the benefactive pronouns, and thus I am setting it aside.

There does, however, seem to be a relationship – at least diachronically – between the benefactive and possessive markers in Tongan (see, *e.g.* Lichtenberk 2002, Margetts 2004, and Song 2005 for discussion). It is also likely that the benefactive and possessive pronouns are similarly derived via the marking of a strong pronoun with a case-marking particle. Speculatively, the benefactive case particles may be derived from their genitive counterparts by the addition of *mV-* (with a goal-introducing applicative function). It does not seem to be the case, however, that this makes the benefactive pronouns a subtype of genitive pronoun in Tongan, nor that there is a feature-geometric relation between benefactive and possessive cases. Because the benefactive pronouns seem to be modifiers of verbal, rather than nominal, expressions, their question of their syntactic derivation is set aside here for future research.

3.5 A partial parallel: Subject clitics and pre-nuclear possessors

The derivation of pre-nuclear possessors via cliticization to D^0 finds a partial parallel in the cliticization of subject-like clitics to Fin^0 . The extent – and limitations – of this parallel is clearest when the comparison is made between verbal clauses and nominalizations. Below, I first present my analysis of how subject clitics are derived in clauses (3.5.1) and, following that, I look at the behaviour of possessors as arguments in nominalizations – specifically, the mandatory cliticization of the highest pronominal argument element to D^0 . While there are clearly differences between the two derivations, there are some striking similarities.

3.5.1. The derivation of subject clitics

Subject clitics in Tongan, because they have a nominative distribution (they can encode S or A, but not O arguments), have been extensively discussed in linguistic literature on the language (see in particular Dukes 1996, Otsuka 2000). This type of cliticization is only possible in Tongan when the highest argument is pronominal. Macdonald (2006, to appear) argues that these subject-like clitics are derived by Agree, copying the ϕ -features of the highest argument (A in transitive sentences; otherwise, S) into Fin^0 , a position within the expanded CP (Rizzi 1997) that is associated with both finiteness and viewpoint. As Tongan is a *pro*-drop language, the lower copy of the pronoun may be elided or pronounced; the latter results in clitic doubling.¹²⁶

Although judgements vary among speakers as to when these clitics are mandatory, optional, marginal, or entirely unacceptable (Table 13), there is an implicational hierarchy among them: For all of these speakers, a third-person singular argument of an intransitive verb is the least likely to be cliticized, and a first-person argument is the most likely (109). This

¹²⁶The fact that non-pronominal DPs cannot double clitic pronouns in Tongan may provide evidence against an Agree-based analysis (Otsuka 2000:144, 162-163). Otsuka (2000, 2002) proposes a movement-based analysis, and she argues that the cases of apparent doubling are best explained as resumptive pronouns reflecting the trace of the moved clitic (Otsuka 2000:162-163).

hierarchy is consistent with Kumo's (1976) speech-act participant empathy hierarchy (109b) and Cook's (1994) empathy hierarchy (109c), suggesting that speaker identification with the copied argument plays a role. For this reason, Macdonald (2006, to appear) proposes that speaker identification is the trigger for cliticization.

TABLE 13: GRAMMATICALITY OF CLITICIZATION BY PERSON, NUMBER, AND ARGUMENT TYPE¹²⁷

	1	2; 3NON-SG	3 SG A	3 SG S
Tchekhoff (1971)	mandatory		optional	
Chung (1978)	mandatory		optional	
FN:SVM (2005-06)¹²⁸	mandatory	optional		marginal
Churchward (1953)	optional			marginal
Dukes (1996)	optional			marginal

- (109) a. Grammaticality of clitic pronouns in Tongan
1st A, S > 2nd A, S ~ 3rd non-sg A, S > 3rd sg A > 3rd sg S
- b. Kumo's (1976) speech-act participant empathy hierarchy
speaker ≤ hearer ≤ 3rd person
- c. Cook's (1994) empathy hierarchy
speech-act participants < 3rd person pronouns < humans < animates < natural forces < inanimates

Ghomeshi (p.c.) notes that these hierarchies are consistent with the relative givenness of the first, second, and third persons, and that the association of the clitic pronoun with viewpoint might reflect that this argument is backgrounded relative to other elements in the sentence. This is consistent with the types of factors that seem to affect the the acceptability of

¹²⁷(Tchekhoff 1971:18-22; Chung 1978:33; Churchward 1953:37, 70; Dukes 1996:151)

¹²⁸This was observed with consultant SM in fieldwork sessions that occurred during 2005 and 2006; the results were presented in Macdonald (2006, to appear).

cliticization with third-person singular arguments. However, it is not the case that third-person singular arguments in Tongan tend not to be backgrounded; rather, highly identifiable third-person singular arguments are very frequently subject to *pro*-drop (Dukes 1996:151, Churchward 1953:70-71, Otsuka 2000:64, who claims that *pro*-drop in Tongan is only available for third-person singular pronouns). My consultant SM's judgement of the grammaticality of certain sentences (without context) varies, suggesting that acceptability of a clitic may be affected by context or discourse. The addition of a PP or adverbial modifier to the clause improves the acceptability of clitics (110), and the presence or absence of contrastive focus on the second of two conjoined clauses also affects cliticization (111). When the 3rd-person S argument of the second clause has a surprising referent (111a), it is realized as a strong pronoun; when it has the expected referent (111b), it is realized as a clitic.¹²⁹

- (110) a. *Na'a (*ne) lavea ia*
 PAST (3.SG) get-hurt 3.SG
 'He got hurt'
- b. *Na'a (ne) lavea ia 'i he hele*
 past (3.SG) get-hurt 3.SG DAT SPEC knife
 'He was hurt by the knife.'

(FN:SVM 2006)

- (111) a. *Na'e taa'i 'e Sione 'a Pita, pea tangi ia.*
 PAST hit-trans ERG Sione ABS Pita, then cry 3.SG
 'Sione_i hit Pita_j, then he_{i/*j} cried.'

¹²⁹Otsuka 2000:122-127, 130 discusses restrictions on argument co-reference in clause co-ordination with *pea*. She notes that in sentences like (111), the case of a null argument in the second clause must be identical to that of its co-referent in the first. Thus, in the second clause of this sentence, if the argument were null, it would obligatorily be interpreted as *Pita*, since the second clause is intransitive and its argument is absolutive. The presence of a pronominal argument in the second clause, however, negates this requirement, allowing the argument of the second clause to be interpreted as either *Sione* or *Pita*. Thus, the fact that SVM shows such a strong preference for it to be interpreted as *Sione* in (111a) and *Pita* in (111b) is somewhat surprising.

- b. *Na'e taa'i 'e Sione 'a Pita, pea ne tangi.*
 PAST hit-TRANS ERG Sione ABS Pita, and 3.SG cry
 'Sione_i hit Pita_j, and he_{j/*i} cried.'

(FN:SVM 2006)

Similar, but not identical, observations have been made in Samoan. Cook (1994) argues that Samoan clitics are “antifocused” pronouns, and he proposes that the clitic position is one of low focus. He assumes that first- and second-person pronouns are naturally in focus due to being at deictic centre of speech act and may be forced out of focus by what he calls an “agent defocusing” suffix on verb, which in turn causes them to be realized as clitics.

I assume that the first and second persons are not naturally in focus but are naturally backgrounded (see Prince 1992:321 *n*9, who notes that even when not previously mentioned in discourse, speakers and hearers are “situationally evoked in the discourse model”). In Tongan, where no special verbal morphology is required to license clitic pronouns, I propose that cliticization is less marked the more backgrounded the argument, and that this generates the hierarchy in (105a), as well as the preference for cliticizing unsurprising third-person arguments and realizing surprising ones as strong pronouns. I assume here that, as argued in Macdonald (2006), clitic pronouns are merged with the TAM in Fin^0 . In addition to being the locus of coarse-grained tense and aspect information, Fin^0 has also been proposed as the locus of point of view (Rizzi 1997, Grohmann 2000) and of subject clitics in Dutch (van Craenenbroeck & van Koppen 2002). The more backgrounded an argument, the more closely its point of view is aligned with that of the speaker, and the more likely it is to appear in Fin^0 .

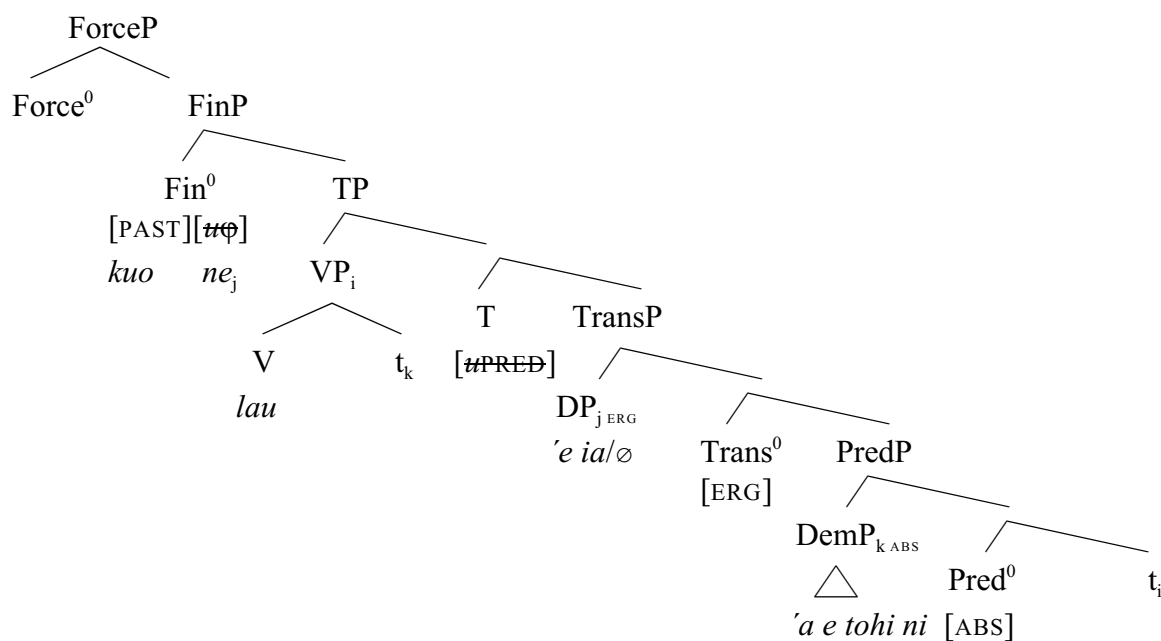
As for the derivation of these clitic pronouns, I propose that they arise from a $u\phi$ in Fin^0 which indicates that there is an alignment between the speaker’s point of view and that of one of the following arguments. This $u\phi$ is valued by copying features from a lower pronoun, which remains *in situ* and may be pronounced or phonologically null. These features must come from the highest argument in the clause, whether that argument is ergative A (merged in [Spec, TransP]) or absolutive S (merged in [Spec, PredP]), thus giving rise to an apparent nominative pattern. The lower argument must also be pronominal, as lexical DPs cannot be

doubled with a clitic (Chung 1978:32; Otsuka 2000:144, 162-3; Ball 2008:131). This may indicate that lexical DPs lack ϕ -features in Tongan, but it is also consistent with the fact that pronouns represent older or unfocused discourse referents, and lexical DPs represent new or focused ones. This derivation is shown in Figure 14.

FIGURE 14: “SUBJECT” CLITICIZATION IN TONGAN

uo ne lau ('e ia) 'a e tohi ni.
 PERF 3.SG read ERG 3.SG ABS SPEC book this
 'He had read this book.'

(Dukes 2001:72, Ball 2008:131)



Arguably, clitics in Tongan are always doubled,¹³⁰ but the pronunciation of the lower, strong pronoun is optional, because Tongan is a *pro*-drop language.¹³¹

3.5.2. Pre- and post-nuclear possessors in nominalizations

As discussed above in section 3.2, one argument in a nominalization may be expressed as a possessor. There are a number of restrictions on this, as outlined by Churchward (1953:96-98). In the case of a transitive nominalization, the following rules apply: If both arguments are lexical, either one may be realized as a possessor, but only if it occurs immediately after the nucleus (a position which Otsuka (2000) has identified as defocused in transitive clauses). If one is pronominal and the other is lexical, the pronominal argument must be realized as possessive determiner. If both are pronominal, the higher one must be realized as a possessive determiner. In an intransitive nominalization, the argument must be realized as a possessive determiner if it is pronominal (if it is lexical, it is ambiguously realized as a subjective-possessor or an absolutive argument, both being case-marked with 'a).

These restrictions reveal an interplay among information structure, argument structure, and case realization. If one argument is defocused relative to the other – by virtue of being pronominal or in a defocused position – it is realized as a possessor. If both arguments are pronominal (and thus defocused), the higher of the two is realized as a possessor. Where possible (*i.e.* whenever it is pronominal), a possessor-argument is expressed in D^0 . This is

¹³⁰Otsuka 2000:145,162 states that sentences such as that in Figure 14, in which a subject-like clitic is doubled by an ergative pronoun, are ungrammatical. She claims that cliticization of S happens after the clitic has checked case in [Spec, AgrO], whereas cliticization of A happens before case-checking in [Spec, AgrS]. In her analysis, the lower pronominal is a kind of resumptive instantiating the case-marked trace of the clitic. Non-allowability of doubled ergative arguments would thus support her analysis, as the ergative clitic would not be case-marked in its post-verbal position.

¹³¹Sailor (2010) notes two ways in which arguments are dropped in Tongan. Ordinary argument drop applies only to ERG and ABS, but not DAT, arguments. But under VP- (or vP -) ellipsis (depending on whether one assumes V^0 - or VP-fronting), all three types of arguments can disappear, because the entire constituent containing these arguments is deleted. V (or VP) is not deleted under VP- (or vP -) ellipsis because it escapes the elided constituent when it undergoes fronting.

interesting because an association of D^0 -possessives with reduced focus is not entirely consistent with the facts of ordinary nominal expressions (*i.e.* those which are not nominalizations), where, as shown in example (81), a possessive determiner can be doubled by a co-referential, post-nuclear possessive pronoun with emphatic reading. However, it is consistent with the notion that D^0 is parallel to Fin^0 , which hosts backgrounded subject-like clitic pronouns. Thus, it seems that in nominalizations, D^0 retains more of the flavour of Fin^0 than it does in ordinary nominal expressions.

3.6. Pseudo-possessive constructions with -'i

In addition to the possessive constructions described above, Tongan has another construction that expresses an ontological relationship between the denotata of two nouns, such as a part-whole relationship. Churchward (1953) considers this another type of possessive construction, but it is syntactically and morphologically quite different from those described above. I will argue that it is best treated as an aspectual construction like those discussed in Chapter 4.

This pseudo-possessive construction consists of two adjacent nouns. The first, marked with the suffix -'i, is pragmatically analogous to the possessum in a possessive construction; the second is analogous to the possessor. This construction is used when the possessor-like noun is non-referential. In (112a), *mata* 'face,' meaning 'blade,' is definite and specific, but *hele*, 'knife' is neither. Likewise in (112b), *ngako* 'fat' is definite and specific, but *puaka*, 'pig' is not. In contrast, in the true possessive constructions in (113), *mata* and *puaka* are specific (as indicated by the determiner *he*) and possibly definite (it is ambiguous whether the definite accent marks embedded DP, the matrix DP, or both).

- (112) a. *he mata'i helé*
 SPEC face-'i knife-DA
 'the knife-blade'

- b. *he ngako'i puaká*
 SPEC fat-'i pig-DA
 'the lard'

(adapted from Churchward 1953:249)

- (113) a. *he mata 'o e helé*
 SPEC face GEN_{OBJ} SPEC knife-DA
 'The blade of the knife.'

- b. *he ngako 'o e puaká*
 SPEC fat GEN_{OBJ} SPEC pig-DA
 'The fat of the pig.'

(adapted from Churchward 1953:249)

In his sketch of the Tongic language Niafo'ou, Early (2002) describes the cognate suffix *-Ci* as a derivational suffix which creates what he calls "premodifiers" from nouns. Like Tongan, Niafo'ou possesses a very small class of pre-nuclear modifiers; in addition to those with *-Ci*, there are *fu'u* 'large,' *ki'i* 'small,' and *toki* 'first'. The last three of these may modify either nouns or verbs, whereas those with *-Ci* may only modify nouns. The pre-nuclear modifiers in Tongan are, similarly, *fu'u* 'large,' *ki'i* 'small,' and all ordinal numerals, as well as *-i* derivations.

According to Early (2002), *-Ci* in Niafo'ou indicates a part-whole relation. In Tongan, however, it seems to indicate something more abstract. With *tefito* 'foot' or 'base' (Churchward 1959:475), it means 'principal,' as in (114); and with *momo* 'fragment' it indicates a tiny quantity of some substance (115).

- (114) a. *tefito 'i ngāue*
 base-'i work
 'principal work'

- b. *tefito 'i me'a*
base-'i thing
'principal thing'

(adapted from Churchward 1953:250)

- (115) a. *ha momo'i maka*
NONSPEC fragment-'i stone
'small fragment of stone'

- b. *ha momo'i mā*
NONSPEC fragment -'i bread
'crumb of bread'

(adapted from Churchward 1953:250)

Churchward notes (1953:249) notes that the two nouns in an -'i construction, unlike those in a canonical possessive construction, “form what is virtually a compound word.” The two nouns must remain strictly adjacent in an -'i construction, whereas in a possessive construction, other modifiers – such as adjectives or numerals – may intervene. Moreover, the modifier is a noun, not a DP; it is non-referential, cannot be modified, has no determiner, and is not marked for case. Furthermore, -'i can be affixed to certain adjectives, normally post-nominal in Tongan, to derive pre-nominal modifiers with slightly idiomatic meanings, as exemplified in (116).

- (116) a. *ha tangata kihi*
NONSPEC man small
'a small man'¹³²

- b. *ha kihi'i tangata*
NONSPEC small-'i man
'an insignificant little man,' 'a little bit of a man'

[Churchward 1953:249]

¹³²Churchward (1953:249) annotates this as “meaning a man who is dwarfed or of stunted growth.”

Thus, although Churchward (1953) calls -'i a possessive suffix, it is not possessive in the semantic sense of expressing a relationship between two entities, nor is the syntax associated with -'i consistent with that of possessive constructions in Tongan. Another clue as to its nature comes from the fact that a number of classifier-like particles are derived via -'i, such as *fo'i* (from *fua* 'fruit' (Churchward 1953:250; see also Early 2002:853)) and *mata'i* (from *mata* 'face, eye') which are used when counting fruit and fish respectively.¹³³ In Chapter 4, I examine such particles as well as other classifier-like elements and analyze them as nominal aspect-markers.

The nature and syntax of nominal aspect, its relation to number, and the ways in which it is analogous to verbal aspect are discussed at length in Chapter 4.

3.7. Chapter Summary

This chapter began with a taxonomy of the Tongan pro-forms. These can be divided into six categories, each representing a different morphological and syntactic structure. In many cases, their morphological structure is evident at a glance, due to their transparency. In other cases, an examination of their syntactic distribution is necessary to determine their internal structure. Clitic personal pronouns, the simplest, consist merely of a ϕ^0 . Strong personal pronouns additionally have a dummy D⁰ (to make them acceptable as arguments), realized as *ki-*, and a dummy N⁰ (to saturate D⁰ syntactically). Post-nuclear possessive pronouns consist morphologically of a ϕ^0 that encodes the possessor's ϕ -features as well as a Poss⁰ which encodes the nature of the possessive relation and marks the pronoun as genitive. Pre-nuclear possessive pronouns are syntactically derived via Agreement-driven cliticization; the mechanism I propose for this is adapted from the work of Uriagereka (1995) and Roberts

¹³³ *Mata'i ika* 'eye-of fish' is comparable in its function to *head of cattle* in English. *Fo'i* is used before the names of fruits to distinguish them from the plants on which they grow and the substance of which they are comprised, and to render them countable. As seen in an earlier example (103), it can also be used to individuate less concrete things, such as *fo'i lea* 'word' from *lea* 'speech.'

(2010). There are also paradigms of elliptical possessive pronouns and benefactive pronouns; these were introduced but their derivations were not discussed at length.

Tongan, like many other Polynesian languages, exhibits two types of possession. A considerable portion of the chapter was spent exploring how best to define these and treat them morphosyntactically. The distributions of the two possessive/genitive markers are roughly conceptual – sometimes fluid, as per Taumoefolau (1996), and in some cases more lexicalized (Churchward 1953). The more marked type, encoded with the genitive/possessive marker *'o* (per Clark 2000), tends to denote part-whole relations and other types of possession often thought of as inalienable. Based on this as well as the distribution of possessive arguments in nominalizations, I adopted the terms genitive-subjective and genitive-objective for *'a*-marked and *'o*-marked possession, respectively. Adopting the approach of Folli and Harley (2006) to v^0 , I refer to these as two flavours of n^0 , assigning two different Θ -roles to possessors.

Turning to the feature-geometry of ϕ , I looked at several approaches to the hierarchy of person (π) and number (#) features. I concluded that the number system of Tongan pronouns is best accounted-for using the geometry of number proposed by Cowper (2003, 2005) and Cowper and Hall (2005), in which singular is unmarked and plural is more marked than dual. The maximal geometry of number features is thus [GROUP [EXTENDED]], interpreted as ‘plural.’ For the three-way person system of Tongan, however, I found that the data were most consistent with the model of Harley (1994), in which there is at most one participant node, even in inclusive forms, and the maximal geometry is [PARTICIPANT [SPEAKER [INCLUSIVE]]], interpreted as ‘(first-person) inclusive.’

The analysis in this chapter accounts for the left-right long-distance relation between pre- and post-nuclear possessive pronouns. The former are complex clitics derived syntactically and spelled out in D^0 , whereas the latter are phrases base-generated in PossP. The derivation I propose for the clitics is based in the work of Uriagereka (1995) and Roberts (2010). Essentially, I propose that the clitic begins as a K^0 merged with [$\mu\phi$] features. Under

agreement with the pronominal possessum in DP, the φ -features of K^0 are valued and rendered interpretable. Subsequently, the higher D^0 , which has its own [$u\varphi$] features, enters an Agree relation with the now-valued φ of K^0 , causing the latter to undergo cliticization into D^0 . The result is a complex clitic consisting of a determiner, a case-marker, and a φ^0 .

The cliticization process by which pre-nuclear possessive pronouns are generated exhibits some interesting parallels to the cliticization of pre-nuclear subject-like pronouns in verbal clauses. In both cases, the φ^0 features of an argument are copied from the its base-generated, post-nuclear position to a pre-nuclear functional head – Fin^0 or D^0 – with optional doubling. However, there are some important differences: Subject-like clitics are created by a straightforward copying of the φ^0 features directly to Fin^0 under complex conditions that involve the interplay of information structure, speaker empathy, and case realization. Possessive clitics are created via two-stage agreement, and cliticization is mandatory when the possessor-argument is pronominal. Interestingly, possessor-arguments in nominalizations seem to be subject to some of the conditions (in particular, defocusing) that apply to subject-like clitics, suggesting that D^0 in nominalizations retains more of the flavour of Fin^0 than does the D^0 in basic nominals.

Chapter 4

Number, Nominal Aspect, and Numerals

In this chapter, I examine number ($\#^0$) and nominal aspect (Asp^0), which are right-peripheral elements in Tongan, and numerals, which occur post-nominally. The functional head $\#^0$ hosts a number-marking particle – *ongo* ‘dual’ or *ngaahi* ‘plural.’ Its complement is an aspect phrase – either outer AspP or, if no outer aspect is projected, inner AspP. The corresponding heads, outer Asp^0 and inner Asp^0 host any of a fairly large number of nominal aspect particles. These, as I will show, indicate how the referent of the nominal expression is “packaged,” encoding classifier-like distinctions such as mass/count, individual/set, fruit/tree, and even sets of particular sizes. Numerals are complex elements right-adjoined to outer AspP or DP.

I propose that cardinal numerals within nominal expressions are clausal in Tongan. The same cardinal numerals are clearly predicational, and in nominal expressions they are preceded by a linking element which I argue is a Tense-Aspect-Mood particle. Numerals which appear without this linking element in nominal expressions occupy a pre-nominal expression and are interpreted as ordinals. Within the highly reduced numeral clause, the numeral is also preceded by a classifier – *toko*- if the referent of the nominal is human, and \emptyset otherwise.

The consequence of adjoining the numeral to an aspect phrase rather than to a lower projection is a close relation between numerals and nominal aspect. This can be seen, in particular, in a series of constructions wherein a special aspectual marker with a precise numerical value is used, and the total quantity of units counted is the product of the values in aspect and the numeral clause. Further supporting evidence comes from the behaviour of *toko*-, which is absent in the presence of certain aspect markers, even when the referent of the noun is human.

There are a number of interesting interactions between numerals, nominal aspect, and number, including the generation of complex numerals used in particular counting situations.

Although the relation between outer aspect (left of the nuclear NP) and numerals (right of NP) is underlyingly local, the appearance of a long-distance relation arises due to the potential robustness of outer AspP and the fact that aspect occupies the left edge of that constituent, while the numeral is right-adjoined to it. Outer AspP may contain, in addition to an outer aspect marker and the nuclear NP, an inner aspect marker as well as pre- and post-nominal adjectives. As a result, Asp⁰ and the numeral are separated, in a linear sense, despite the fact that they are in what I argue is a local relation of adjunction.

This chapter begins (section 4.1) with a catalogue of pluralizing pre-nominal particles, of which I propose only two are actual number markers. The rest, I propose, are outer aspect markers. In section 4.2, I examine the nature of nominal aspect. I adapt Rijkhoff's (2002) proposal, showing how it can be represented with a hierarchy of monovalent, contrastively specified features arranged under two syntactic heads: inner aspect and outer aspect. I also look at how nominal aspect interacts with number. In sections 4.3 and 4.4, respectively, I examine the internal and external syntax of Tongan numeral clauses, showing that my analysis can account for their interesting interactions with nominal aspect. Finally, I conclude the chapter with a brief summary (section 4.5).

4.1. Pluralizing particles in the left periphery

4.1.1. *Ngaahi* and *ongo*

Tongan has previously been described (*e.g.* Churchward 1953, 1959; Dukes 1996; Hendrick 2005) as having a variety of number markers, some with classificatory functions. I propose that, in fact, it has only two: *ngaahi* (plural) and *ongo* (dual) (117).

- (117) a. *he mapi 'i he holisi*
 SPEC map DAT SPEC wall-DA
 'The map on the wall.'

- b. *he ongo mapi 'i he holisí*
 SPEC DU map DAT SPEC wall-DA
 'The maps (2) on the wall.'
- c. *he ngaahi mapi 'i he holisí*
 SPEC PL map DAT SPEC wall-DA
 'The maps (>2) on the wall.'

(adapted from Churchward 1953:45)

Although it would be plausible to posit a null singular number marker, I do not have clear evidence that one exists. Possible evidence for the lack of a singular marker is the fact that the 'singular' interpretation of an underspecified (for mass/count) noun like *moli* 'orange' seems to be available without an individuating aspect marker, whereas plural and dual markers require the individuating aspect marker *fo 'i* for grammaticality. As will be discussed in section 4.2, this is due to the fact that *moli* is a general noun, and #⁰ requires its complement to be a Single Object or Set noun.

There are a variety of nominal aspect markers in Tongan. In this section, I introduce the ones that have been elsewhere treated as number markers. Each of these contains plurality as part of its meaning but encodes more than simple plurality. As we will see, they can also encode diminutivity, humanness, large or small number, and distributivity. In the following section I will explain why they do not occupy #⁰ and should not be treated as number markers.

4.1.2. *Fanga*

Fanga is used to indicate plurality with NPs denoting animals (118a) and with inanimate objects preceded by *ki 'i* 'small' (118b) and to indicate both plurality and affection NPs denoting kinship terms¹³⁴ (119).

¹³⁴According to Churchward (1953), *fanga* is occasionally used in place of *kau* with kinship terms, to express affection as well as plurality. He also states that *fanga* is the normal plural marker with *tamaiki*, 'children.' However, my consultant says that while *fanga tamaiki* is acceptable when "you don't really know the children," *kau tamaiki* is generally better.

(118) a. *ha fanga pulu*
 NONSPEC ASP COW
 ‘some cows’

b. *ha fanga ki'i vaka*
 SPEC ASP little boat
 ‘Some little boats.’

(adapted from Churchward 1953:29)

(119) *Ko hai koā 'eku fa'éé mo hoku fanga tokouá?*
 PRED who huh? GEN_{SBJ}+1EX.SG mother and GEN_{OBJ}.1EX.SG ASP brother-DA
 ‘Who is my mother? Who are my brothers?’

(adapted from Ma'ake 3:33)

4.1.3. *Kau*

Except when, as described above, *fanga* is used to express affection, *kau* is the aspect marker normally used to indicate plurality of NPs with human referents (120). Interestingly, it adds ‘human’ to the meaning of nouns whose meanings are otherwise underspecified (121).

(120) *ma'a e kau faifekau*
 for SPEC ASP minister-DA
 ‘For the ministers.’

(adapted from Churchward 1953:29)

(121) a. *ha ngaahi malanga*
 NONSPEC PL preach
 ‘sermons’

a'. *ha kau malanga*
 NONSPEC ASP preach
 ‘preachers’

b. *ha ngaahi lotu*
 NONSPEC PL religion
 ‘religions’

b'. *ha kau lotu*
 NONSPEC ASP religion
 ‘worshippers’

- | | | | | | |
|----|-----------|----------------------|-----|-----------|--------------------------|
| c. | <i>ha</i> | <i>ngaahi mahaki</i> | c’. | <i>ha</i> | <i>kau mahaki</i> |
| | NONSPEC | PL | | NONSPEC | ASP |
| | | disease | | | disease |
| | | ‘diseases’ | | | ‘sick persons, patients’ |
- (adapted from Churchward 1953:31)

4.1.4. *’Ū*

’Ū may be used instead of the plural marker *ngaahi* to express plurality with NPs whose referents are inanimate and not preceded by *ki’i*. Churchward (1953:29) notes that it adds to the expression of plurality a sense that “a small number of things or a number of things spread over a smaller area” is denoted (Churchward 1953:29). In (122), note that the plural marker *ngaahi* is used with *paipa iiki* ‘capillaries’ (*lit.* ‘small pipes’) in (122a), but that the aspect marker *’ū* is used with *paipa lalahi* ‘veins’ (*lit.* ‘large pipes’) in (122b). This overlap in functions between number and nominal aspect markers will be seen and explored at length, below, and it will be shown that the two occupy different syntactic positions and frequently co-occur.

- (122) a. *ha* *ngaahi paipa iiki*
 NONSPEC PL pipe small
 ‘capillaries’
- b. *ha* *’ū paipa lalahi*
 NONSPEC ASP pipe large
 ‘veins, arteries’

(adapted from Churchward 1953:29)

4.1.5. *Tukui, tu’u, hala*

Tukui, tu’u, and *hala*, exemplified in (123-125), are less-productive nominal aspect markers used, respectively, with NPs denoting place-names, with *fale* ‘houses,’ and with *’api* ‘allotments, homes.’ As such, they are roughly synonymous with *ngaahi* or *’u*; however, they differ from these in adding “the sense of an unemphatic ‘various’” (Churchward 1953:30). *Tu’u* and *hala* are now rare and can be replaced by *tukui*.

(123) a. *ki he ngaahi fonuá*
 DAT SPEC PL country-DA
 ‘to the countries’

b. *ki he tukui fonuá*
 DAT SPEC ASP country-DA
 ‘to the various countries’

(adapted from Churchward 1953:30)

(124) a. *hotau ngaahi fale*
 SPEC+GEN_{OBJ}+1INC.PL PL house
 ‘our houses’

b. *hotau tu’u (or tukui) fale*
 SPEC+GEN_{OBJ}+1INC.PL ASP house
 ‘our various houses’

(adapted from Churchward 1953:30)

(125) a. *hotau ngaahi ‘api*
 SPEC+GEN_{OBJ}+1INC.PL PL allotment
 ‘our allotments; our homes’

b. *hotau hala (or tukui) ‘api*
 SPEC+GEN_{OBJ}+1INC.PL ASP allotment
 ‘our various allotments/homes’

(adapted from Churchward 1953:30)

4.2. Nominal aspect, *Seinsart*, and number

4.2.1. Nominal aspect and number

The nominal aspect markers described above are treated as number markers in previous literature, but I propose they are something different, based on distribution and meaning.

Ngaahi is a straightforward expression of number with no additional meaning. It can precede

any of the pluralizing nominal aspect markers to indicate multiple groups of the referent (126, 127), but the nominal aspect markers cannot co-occur.

- (126) a. *ngaahi fanga*¹³⁵ *tamaik*
 PL ASP child
 ‘groups of children’
- b. *ngaahi kau faifekau*
 PL ASP minister
 ‘groups of ministers’
- c. *ngaahi ’ū tohi*
 PL ASP book
 ‘groups of books’

(adapted from Churchward 1953:30)

- (127) a. *ngaahi ’ū tēpile*
 PL ASP table
 ‘groups of tables’
- b. *ngaahi kau hiva*
 PL ASP sing
 ‘choirs’ or ‘groups of singers’

(FN:LMK 2009)

In this, the pluralizing nominal aspect markers pattern like collective nouns; they, too, are always pluralized with *ngaahi*, regardless of the animacy, humanness, etc. of the contentful noun (128).

¹³⁵There is ambiguity in my data about the allowability of *ngaahi fanga*. Churchward states that this sequence is acceptable, but consultant LMK rejects (126a), stating categorically that “you never put *ngaahi* and *fanga* together” (although she does accept them together in other contexts, such as with *foha* ‘(man’s) son’) This suggests that the distinction between number and aspect markers may not be a simple one; some particles may do “double duty” (Massam, p.c.; see Massam 2010 for a similar observation in Niuean), and other elements within the nominal expression may affect how they interact. Nevertheless, an internet search yields many hits, including government documents, where the string *ngaahi fanga* occurs, particularly before *ki’i+N*. Moreover, on a later occasion, LMK judged as grammatical the sentence in (135), in which *ngaahi fanga* precedes *ki’i + N*. It is possible that her idiolect is atypical in this, and it also seems that, for some reason, the presence of *ki’i+N* makes the sequence more acceptable.

- (128) a. *ngaahi fuhinga kālepi*
 PL **bunch** grape
 ‘bunches of grapes’
- b. *ngaahi fuifui lupe*
 PL **flock** pigeon
 ‘flocks of pigeons’
- c. *ngaahi fa’ahinga tangata*
 PL **kind** person
 ‘kinds (races) of people’

(adapted from Churchward 1953:30)

I thus propose that ontological plurality in Tongan can be expressed in either of two structural positions. *Ngaahi* and *ongo* are true number markers, expressing simple duality/plurality, and thus occupy #⁰. The other apparent plural markers, as well as the collective nouns, occupy an aspectual head and express nominal aspect – *i.e.* how the item/substance/group denoted by NP⁰ is “packaged.” Nominal aspect can host features such as countability (*fo’i*, described below; *cf.* Borer (2005), animacy (*kau*; *cf.* Wiltschko 2009), and something like affection or diminutivity (*fanga*). The fact that this “packaging” can include something very similar to plurality suggests that the relation between number and nominal aspect is not entirely straightforward.

In the rest of this section, I show that nominal aspect markers can be subcategorized into markers of inner and outer aspect. The pluralizing aspect markers described above instantiate outer Asp⁰; this head hosts a feature [HOMOGENEITY], which marks collectiveness and ontological plurality by distinguishing between singleton and non-singleton sets. The locus of inner aspect markers, inner Asp⁰, host a feature [SHAPE], which distinguishes between countable and non-countable expressions of the same nominal and disambiguates between different configurations of a of substances. First, I present Rijkhoff’s (2002) proposal for nominal aspect and *Seinsart*, on which my analysis is based. Following this, I examine how nominal aspect and *Seinsart* are expressed in Tongan nominals, and I develop a proposal for

representing this syntactically using binary branching and monovalent features. I conclude this section by observing that features besides [SHAPE] and [HOMOGENEITY], such as animacy, are also associated with nominal aspect in Tongan and, as has been previously observed by Wiltschko (2009, 2012) in Blackfoot.

4.2.2. Nominal aspect and *Seinsart*

Rijkhoff (2002) introduces the concepts of nominal *Seinsart* and nominal aspect, an analogous pair to verbal *Aktionsart* and verbal aspect. Just as verbal aspect specifies or modifies the *Aktionsart* of verbs, nominal aspect specifies or modifies the *Seinsart* of nouns. This analysis offers some promise for an understanding of what I have termed nominal aspect particles in Tongan; moreover, the overlap in function between these and number markers seems to me to be reminiscent of that between verbal aspect and tense.

Rijkhoff (2002) proposes that *Aktionsart* and verbal aspect both have to do with the distinctions [+BEGINNING] VS. [-BEGINNING] and [+ENDING] VS. [-ENDING]. Verbal aspect provides specification for these features when the *Aktionsart* of a verb is underspecified. Similarly, he proposes that the *Seinsart* and nominal aspect of nouns provides valuation for the features [HOMOGENEITY] and [SHAPE], specifically [+ HOMOGENEOUS], [-HOMOGENEOUS], or no feature for homogeneity, and [+ SHAPE] or [-SHAPE].¹³⁶ This generates 6 classes of nouns, as shown in Table 14, below. Note that not all classes of nouns can be pluralized: Two classes (collectives and singular objects) must be marked for plurality when accompanied by a numeral greater than one; three classes (mass, sort, and general nouns) cannot be marked for plurality; and one class (set nouns) may be accompanied by an optional *collective aspect* marker in such cases.

¹³⁶This 3-way distinction in value for [HOMOGENEITY] is a challenge to capture in an underspecified hierarchical feature model. I offer a proposal in section 4.3.2, below.

TABLE 14: RIJKHOFF'S (2002) PROPOSED NOUN CLASSES

	[HOMOGENEITY]	[SHAPE]	numeral construction	plural marker
collective	-	+	direct	obligatory
singular object	+	+	direct	obligatory
set	n/a	+	direct	collective aspect
mass	+	-	mensural classifier	none
sort	-	-	sortal classifier	none
general	n/a	-	general classifier	none

In languages with set nouns, what is generally described as a plural marker is, according to Rijkhoff (2002), actually a marker of collective aspect. Set nouns, being underspecified for [HOMOGENEITY] are thus interpretable as singleton or collective sets. Certain nominal aspect markers specify a value for [HOMOGENEITY], thus indicating that the set is singular [+HOMOGENEOUS] or collective [-HOMOGENEOUS]. Unlike plural markers, collective aspect markers are not obligatory and may be omitted when a non-singular interpretation is coerced via other means, such as with numerals.

Classifiers in Rijkhoff's (2002) analysis differ from both plural markers and collective nominal aspect markers. *General* classifiers are used in languages with general nouns – *i.e.* those which, like set nouns, have no specification for homogeneity, but which differ from set nouns in being [-SHAPE]. These classifiers provide information about the unit being counted; for example, in Yucatec Maya, where nouns are “neutral with respect to logical unit or shape,” (Rijkhoff 2002:28), a general noun might denote a type of plant-matter, and classifiers are necessary to distinguish among fruit, leaf, and tree (129). Thus, general

classifiers not only render nouns countable, but provide disambiguating information about their referents.

(129) Yucatec Maya

- a. *'un-tz'it há'as*
1-CL banana
'banana (fruit)'
- b. *'un-wáal há'as*
1-CL banana
'banana leaf'
- c. *'un-kíul há'as*
1-CL banana
'banana tree'

(Rijkhoff 2002:47)

Lyons (1977) distinguishes between mensural classifiers (measure phrases), which are used with mass nouns to divide them into countable units of measure, and sortal classifiers, which are used with nouns which, ontologically, have natural, countable units. Rijkhoff (2002) notes that in his analysis, mensural classifiers are used with mass nouns, which are [-SHAPE] and [+HOMOGENEOUS], and sortal classifiers are used with sort nouns, which are [-SHAPE] and [-HOMOGENEOUS]. In both cases, classifiers render the nouns countable by adding [+SHAPE]. To illustrate the difference, Rijkhoff (2002) provides examples from Thai, which has both mass and sort nouns, so both mensural and sortal classifiers (130).

(130) Thai:

- a. *thian sù lêm*
candle 2 CL:LONG+POINTED
'two candles'
- b. *dinnǎaw sǎam kǎon*
clay 3 lump
'three lumps of clay'

(Rijkhoff 2002:48)

4.2.3. A feature geometry of *Seinsart* and nominal aspect

It is difficult to reconcile Rijkhoff's (2002) inventory with an assumption of monovalent, contrastively specified features, which I have adopted elsewhere in this dissertation. Specifically, his system relies on three values for homogeneity: positive, negative, and unspecified. While this could theoretically be coerced by making [HOMOGENEOUS] dependent on [SHAPE], such a dependence is ruled out by the fact that the values for homogeneity and shape vary independently (all three values of [HOMOGENEOUS] are available whether the value of [SHAPE] is positive or negative, and both values of [SHAPE] are available whether [HOMOGENEOUS] is positive, negative, or unspecified).

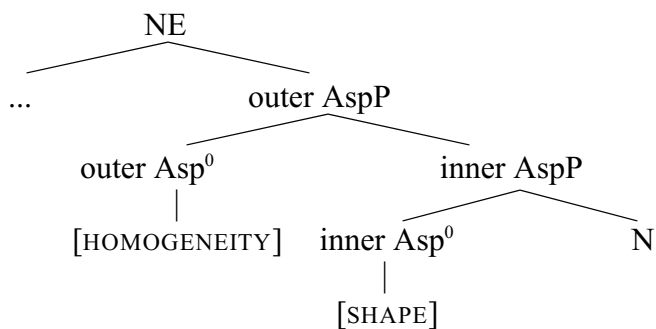
Instead, I propose that [HOMOGENEITY]¹³⁷ and [SHAPE] are monovalent features dependent on different aspectual heads, and that the head which hosts [HOMOGENEITY], but not that which hosts [SHAPE], may be absent. The absence of this head corresponds to those configurations in Rijkhoff (2002) in which homogeneity is unspecified. In such configurations, [HOMOGENEITY] is non-contrastively absent. Where the head which hosts [HOMOGENEITY] is present, the presence or absence of the feature is contrastive (corresponding to a positive or negative value, respectively).

This is illustrated in Figure 15, below. In these trees, I have represented the syntactic heads associated with [HOMOGENEITY] and [SHAPE] as outer aspect and inner aspect, respectively. NE here stands for nominal expression. Outer Asp⁰ is dominated in Tongan by #⁰, but I make no claims about this in other languages.

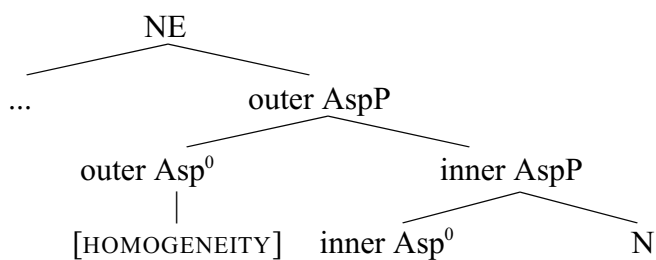
¹³⁷I use the nominal [HOMOGENEITY] rather than the adjectival [HOMOGENEOUS] for consistency with the nominal [SHAPE].

FIGURE 15: FEATURE GEOMETRY DERIVING RIJKHOFF'S (2002) NOUN CLASSES

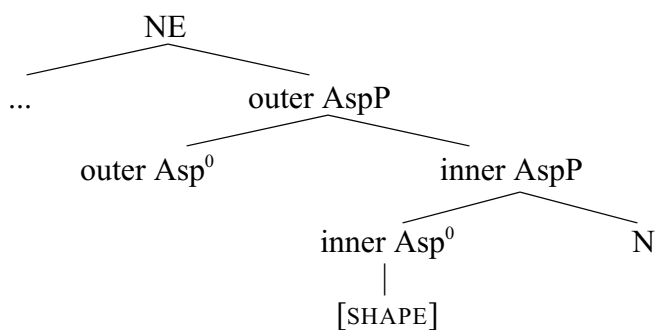
A. SINGULAR OBJECT: [+HOMOGENEITY][+SHAPE]



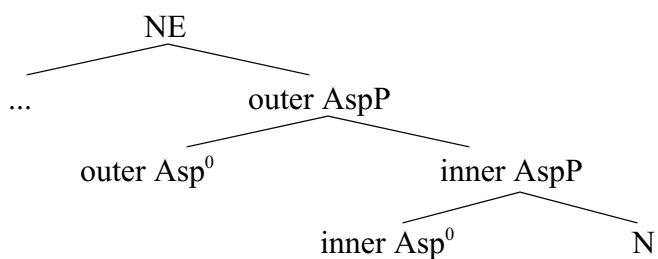
B. MASS: [+HOMOGENEITY][-SHAPE]



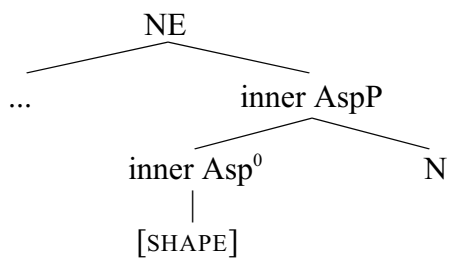
C. COLLECTIVE: [-HOMOGENEITY][+SHAPE]



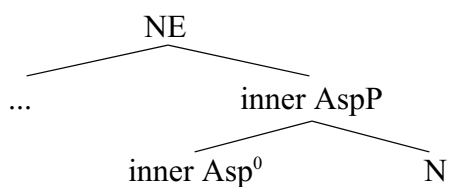
D. SORT: [-HOMOGENEITY][-SHAPE]



E. SET: [+SHAPE]



F. GENERAL: [-SHAPE]



The separation of nominal aspect into two syntactic projections is not purely a matter of mechanical convenience; it allows for nominal aspect markers to be classified according to which feature they specify and for two nominal aspect markers to co-occur. As I will show in the following sections, both of these phenomena are evident in Tongan.

4.2.4. *Seinsart* and nominal aspect in Tongan

Tongan nouns seem to correspond to four of the six classes proposed by Rijkhoff (2002): general, set, singular object, and collective. There is no clear evidence in the language for separate classes of mass and sort nouns; I assume, for now, that these do not exist in the language, although their presence – if demonstrated – would not pose a serious challenge to the current proposal. Thus, in Figure 15 above, only the trees in (a), (c), (e), and (f) are relevant in Tongan. This indicates that, in Tongan, outer aspect can only be projected if [SHAPE] is present.

The trees above suggest that one class of nouns should be derivable from the other, simply by adding the feature [SHAPE] to inner Asp⁰ or by adding an outer aspect projection, with or without [HOMOGENEITY], to the nominal expression. It also suggests that two aspect markers should be able to co-occur, if one expresses [SHAPE] and the other expresses [HOMOGENEITY]. This is precisely what I propose: A general noun, such as *moli* ‘orange’ can be merged with an inner aspect marker, such as *fo’i* ‘fruit-of,’ to derive a set noun; and a set noun, such as *fo’i moli* ‘orange (fruit)’ can be merged with an outer aspect marker, such as *’ū*, to derive a collective noun, such as *’ū fo’i moli* ‘several oranges.’ Collective nouns, in turn, can be pluralized, to generate a phrase such as *ngaahi ’ū fo’i moli* ‘several groups of oranges.’

Looking at this example more closely, *moli*, being a general noun, lacks [SHAPE] and does not project outer aspect. The inner aspect marker *fo’i*, ‘fruit-of,’ contains semantic features which constitute [SHAPE]. It is important to note here, that the word *fo’i* does not denote a particular shape: According to Churchward (1953:250) it probably consists, morphologically, of *fua* ‘fruit’ and the possessive-like suffix *’i*, introduced in the previous chapter. This *’i* is essentially an incorporating suffix which allows two nouns to be linked in a compound, often denoting a part-whole or substance-object relation (Churchward 1953:250-251; see also examples 85, 87-89 in Chapter 3). *Fo’i* is used pre-nominally with various nouns to impart individuation, as seen in (131) below:

- (131) a. *ha fo'i moli*
 NONSPEC *fo'i* orange
 'an orange' (cf. *ha moli*, 'some orange,' or 'an orange tree')
- b. *ha fo'i mā*
 NONSPEC *fo'i* bread
 'a loaf of bread' (cf. *ha mā*, 'some bread')
- c. *ha fo'i lea*
 NONSPEC *fo'i* speak
 'a word' (cf. *ha lea*, 'a speech' or 'a language')
- (adapted from Churchward 1953:250-251)

According to Rijkhoff (2002), pluralization and nominal aspect marking are important diagnostics of noun class. Only collective and singular object nouns can be combined with a plural marker. Set nouns cannot be combined with plural markers but instead can be combined with aspectual particles which indicate whether the set is a collective (multiple members) or a singleton (one member). General, sort, and mass nouns cannot be combined with either plural markers or aspectual markers.

Given this distribution of aspectual and plural markers, it seems clear that *moli*, which alone is vaguely defined as 'an orange,' 'some oranges,' 'some orange (stuff/pulp),' or 'an orange tree,' (132) and cannot be directly merged with a nominal aspect marker such as *'u*, (132b) nor with the plural marker *ngaahi* (132c), is a general noun.

- (132) a. *ha moli*
 NONSPEC orange
 'an orange tree,' 'an orange,' 'some oranges,' 'some orange (pulp)'
- b. **ha 'u moli*
 NONSPEC ASP.COLL orange
 intended: 'some oranges' or 'some orange trees'

- c. **ha* *ngaahi* (∅) *moli*
 NONSPEC PL (ASP.SING) orange
 intended: ‘some oranges’ or ‘some orange trees’

(FN:LMK 2009, 2012)

Once merged with *fo’i*, the resulting phrase – *fo’i moli* – ‘orange (fruit)’ is a set noun and can be combined with a marker of outer aspect. If this marker has the feature [HOMOGENEITY], the set is specified as singulative, referring to one orange. Otherwise, it is collective, denoting a set of oranges. Note that while the collective aspect marker, ‘*ū*’, is phonologically overt, I propose that its singulative counterpart is null.¹³⁸

The derived set noun, if it is marked with the collective aspect marker ‘*ū*’, becomes a collective noun. If it is marked with the null singulative aspect marker, it becomes a single object noun. Either way, it can now be combined with the plural marker, *ngaahi*, which denotes a plurality of these sets, whether the set itself is singleton or collective (133).

- (133) a. *ha* *ngaahi* ∅ *fo’i* *moli*
 NONSPEC PL ASP.SING ASP.SET orange
 ‘some oranges’

- b. *ha* *ngaahi* ‘*ū*’ *fo’i* *moli*
 NONSPEC PL ASP.COLL ASP.SET orange
 ‘some groups of oranges,’ ‘lots of oranges’

(FN:LMK 2009)

¹³⁸ I have chosen to follow Rijkhoff (2002) in using [HOMOGENEITY] as the feature which distinguishes between singulative (homogeneous) and collective (non-homogeneous) sets. However, as can be seen in the following discussion, this has an odd consequence: The Collective marker, which lacks the feature [HOMOGENEITY], is morphosyntactically unmarked but phonologically overt. The Singulative marker, which has the feature [HOMOGENEITY] is morphosyntactically marked but phonologically null. It may be desirable, in a future refinement of this theory, to align phonological and morphosyntactic markedness by choosing an alternative to [HOMOGENEITY] which will be present in the (overt) Collective markers and absent in the (null) Singulative marker. The most obvious choice might be [NON-HOMOGENEITY], but the use of a negative term feels awkward to me. A more elegant solution would be to find a simple antonym for [HOMOGENEITY], but, as this will somewhat obscure the debt owed to Rijkhoff (2002), I will leave it for a future refinement of this analysis.

Not all set nouns in Tongan – relatively few, in fact – are syntactically derived. Most nouns combine directly with a marker of plurality, without first merging with an inner aspect marker. I assume that these nouns inherently have the feature [SHAPE] in their lexical entries; in Rijkhoff's (2002) terminology, [SHAPE] is part of their *Seinsart*, and thus it does not need to be specified via aspect.

Rijkhoff (2002) notes that in many languages, there is an association between the *Seinsart* classification of nouns and features such as animacy/humanness/rationality (pp. 34-38), or size (pp. 117-119). The animate/inanimate and human/non-human distinctions, in particular, frequently correspond with different *Seinsarten*.¹³⁹ Superficially, Tongan seems to exhibit both associations: As noted above, most nouns denoting humans, as well as those which denote animals or are preceded by *ki'i* 'small,' may not take the plural marker *ngaahi*. Instead, those denoting humans must be marked for plurality with the collective aspect marker *kau*; those which denote animals or are preceded by *ki'i* 'small' must be marked for plurality with the collective aspect marker *fanga*. Nouns which do not fall into one of these two categories may be marked either with the collective aspect marker *'ū* or with the plural marker *ngaahi*.

These facts would suggest that animate nouns in Tongan and those with *ki'i* are obligatorily set nouns and that inanimate nouns without *ki'i* are flexible – optionally set or single object nouns. However, the assumption of such a large, flexible class has uneconomical consequences. If they can optionally be either set or single object nouns, the lexicon must contain two copies of each. Likewise, if inanimate general nouns, such as *moli* 'orange,' when preceded by an inner aspect marker such as *fo'i*, become members of this flexible class, the lexicon must contain two copies of each inner aspect particle – one which derives set nouns (by imparting only [SHAPE]) and one which derives single object nouns. The single object version of each noun and aspect marker would need to have inherent, lexical

¹³⁹See especially Table 4.2, "Languages with Set Nouns" (Rijkhoff 2002:107). At least 16 of the 33 languages in his survey with a class of Set nouns grammaticalize [±HUMAN] and/or [±ANIMATE] distinctions either by limiting the class of Set nouns to those with a particular value for one of these features, or by using different collective markers for Set nouns according to their humanness and animacy.

specification for non-homogeneity, either by a negative feature value (inconsistent with the system of monovalent features adopted here) or by having a more complex syntactic structure than its set noun counterpart (an incorporated and necessarily empty outer aspect head).

It is therefore simpler to assume that singular object nouns in Tongan are not inherent to the lexicon but are derived with a null outer aspect marker. In fact, I have already hinted at this, above, in the derivation of *ngaahi fo 'i moli* ‘some oranges’ (134a). This null outer aspect marker possesses the feature [HOMOGENEITY] and thus indicates that its nominal complement is a Singulative set (here pluralized by *ngaahi*). It stands in opposition to *'ū*, which lacks the marked [HOMOGENEITY] feature and derives collective set nominals.

Interestingly, while *'ū* and (\emptyset plus) *ngaahi* are “more or less interchangeable” (Churchward 1953:29), there is a subtle difference in meaning between them; *'ū* “more naturally suggest[s] a smaller number of things, or things spread over a smaller area” than *ngaahi*. This suggests that the semantic distinction between *'ū* and \emptyset is more than just the presence or absence of [HOMOGENEITY] but, in fact, has to do with the boundedness of the set. It is not unreasonable that a collective nominal (here, derived by adding *'ū* to an unspecified set noun) would indicate a smaller or more narrowly distributed group of things than a pluralized single-object noun (derived by adding the null singulative marker to a set noun and pluralized with *ngaahi*).

There is an interesting complication to this picture. While most nouns in Tongan are set nouns, and a few are general nouns, there does exist a very small class of nouns that are inherently single object nouns. Specifically, nouns which denote humans by their relation with the speaker (relatives, enemies, friends), as well as *'otua* (‘god, object of worship’), *tu 'i* (‘king’), or *'eiki* (‘chief’) are thus pluralized directly with the number marker *ngaahi* and cannot be preceded by any of the collective aspect markers. Because this class of nouns is so small, I will not explore this problem in more detail, but simply note here that the Tongan lexicon includes general, set, and single object nouns; that it allows the derivation of set from general nouns and both single object and collective nouns from set nouns; and that recursive

derivations are possible, so that a noun may undergo derivation from general to set and set to single object or collective, and pluralization after that.

Table 15, below, summarizes the above discussion. It outlines the four *Seinsarten* of Tongan in terms of the presence or absence of [SHAPE] and [HOMOGENEITY] and notes how each may be further modified with a nominal aspect marker or a plural marker.

TABLE 15: THE FOUR *SEINSARTEN* OF TONGAN

	[HOMOGENEITY]	[SHAPE]	aspect modification or pluralization
general		absent	Add an inner aspect marker with [SHAPE] (e.g. <i>fo'i</i> or <i>fu'u</i>) to derive a set nominal, allowing further modification by an outer AspP.
set	non-contrastively absent (outer aspect not projected)	present	<i>Inanimate only:</i> Add the null outer aspect marker \emptyset which adds [HOMOGENEITY], to derive a singular object (singulative Set) nominal, allowing pluralization with <i>ngaahi</i> .
			<i>Regardless of animacy:</i> Add an outer aspect marker without [HOMOGENEITY] (e.g. <i>'u</i> (inanimate) or <i>kau</i> or <i>fanga</i> (animate)) to derive a collective (collective Set) nominal (aspectual plural), allowing further pluralization with <i>ngaahi</i> .
singular object	present		Pluralization with <i>ngaahi</i> indicates a plural number of <u>individuals</u> .
collective	absent		Pluralization with <i>ngaahi</i> indicates a plural number of <u>groups</u> .

4.2.5. Nominal aspect and animacy (in Tongan and Blackfoot)

I return now to the problem of how animacy (and, to a lesser degree, size) interact with nominal aspect in Tongan. Recall that inanimate set nouns (so long as they are not preceded by *ki'i*), can be specified as singulative sets by being merged with \emptyset (which imparts [HOMOGENEITY]) or as collective sets with *'ū* (which lacks [HOMOGENEITY]), and that both singulative and collective set nouns can be pluralized with *ngaahi*. In contrast, animate nouns and nouns preceded by *ki'i* cannot occur directly after *ngaahi*, suggesting that they are neither inherently singular object nouns nor can be merged with \emptyset to derive singleton sets. Rather, they can be pluralized only by specification as collective sets, by being merged with *fanga* or *kau*. (The collective sets so derived can themselves be pluralized with *ngaahi* in the same way as other collective sets). The ungrammaticality of (134a) indicates that there is no such thing as an animate, singulative set noun, and the ungrammaticality of (135a) indicates that there is no such thing as a singulative set noun in which *ki'i* precedes the nominal. For some reason, the singulative set marker \emptyset is incompatible with animate nominals and nominals containing *ki'i*.

(134) a. **ngaahi* (\emptyset) *tamaiki/tamasi'i*
 PL (ASP.SING) children/child
 (intended: 'children')

b. *fanga* *tamaiki*
 ASP.COLL children
 'children'

(FN:LMK 2009)

(135) a. **ngaahi* (\emptyset) *ki'i tēpile*
 PL (ASP.SING) small table
 (intended: 'small tables')

b. *fanga* *ki'i tēpile*
 ASP.COLL small table
 'small tables'

(FN: LMK 2009)

This asymmetry between animate and inanimate nominals in Tongan has an interesting effect. Recall that both collective sets (derived collective nominals) and singulative sets (derived single object nominals) can be pluralized with *ngaahi*, whereas general and unspecified set nominals cannot. It is thus possible to use the plural marker *ngaahi* with collective or singulative inanimate sets (136a,b) or collective animate sets (137), but not with singulative animate sets (138), because the last do not exist as grammatical objects in Tongan.¹⁴⁰

- (136) a. *ngaahi 'ū* *tēpile*
 PL ASP.COLL table
 ‘groups of tables’
- b. *ngaahi ∅* *tēpile*
 PL ASP.SING table
 ‘tables’

(FN:LMK 2009)

- (137) *ngaahi fanga* *tamaiki*
 PL ASP.COLL child
 ‘groups of children’

(adapted from Churchward 1953:30)

¹⁴⁰In rejecting example (138), LMK’s judgment is consistent with what my analysis predicts as well as what seems to be implicit in Churchward (1953:30-31). However, she differs from Churchward (1953) in that she does not accept (137). She readily accepts *ngaahi kau hiva* ‘choirs,’ but she rejects many similar constructions in which *ngaahi* precedes *kau* or *fanga*, such as *ngaahi kau tangata* (intended: ‘groups of men’), *ngaahi kau fefine* (intended: groups of women) or *ngaahi kau mahaki* (intended: ‘groups of sick persons’) (cf. *ngaahi mahaki* ‘diseases’ and *kau mahaki* ‘sick persons’ (Churchward 1953:31, FN: LMK 2014). Thus, while both *kau mahaki* ‘sick persons’ and *kau hiva* ‘choir’ seem to be derived in the same way – by merging an underspecified root with a [+HUMAN] collective marker – they are not equally able to undergo pluralization by *ngaahi*, suggesting that this construction may not be as productive as Churchward (1953) claims. On the other hand, Internet searches for “*ngaahi kau **” and “*ngaahi fanga **” yield numerous results – from diverse sources which include newspapers, discussion forums, and the Bible – which seem to confirm Churchward’s (1953) claim, e.g. *he patū 'oe ngaahi sāliote, mo e longoa'a 'oe ngaahi fanga hoosi* ‘the tramping of chariots, and the noise of horses’ (II Tu’i/II Kings 7:6, Revised West Version). More research is needed in order to understand when such sequences are licit and when they are not, and whether there is in fact a structural difference between *ngaahi kau hiva*, which is accepted by both Churchward (1953) and LMK and *ngaahi fanga tamaiki*, which is accepted by Churchward (1953) but not LMK.

- (138) * *ngaahi* (∅) *tamaiki*
 PL (ASP.SING) child
 Intended: Some children

(FN: LMK 2014)

There is an additional element to the interaction of nominal aspect and animacy in Tongan: The collective marker *kau*, which is used with most human set nominals, does not simply reflect the humanness of the nominal expression, but it in fact can be used to add humanness – in addition to collectiveness – to the meaning of a nominal expression which would otherwise be understood as inanimate. This is shown in (121), above, in which *malanga* ‘sermon,’ *lotu* ‘religion,’ and *mahaki* ‘disease’ become *kau malanga* ‘preachers’ *kau lotu* ‘worshippers,’ and *kau mahaki* ‘sick person,’ respectively.¹⁴¹ It is also the case with *hiva*

¹⁴¹To derive singular human nouns from these roots, a [HUMAN] noun such as *tangata* ‘man’ or *fefine* ‘woman’ would be used in place of *kau*.

‘song’ and *kau hiva* ‘choir/group of singers’ and numerous other nouns¹⁴² (Churchward 1953:31 and field notes).

Again, while it is possible that there exists a class of nouns for which there are two lexical entries – one human, and the other non-human – it seems more economical to propose that [HUMAN] is, in addition to being a feature which can be inherent to a noun, associated with aspect when humanness is derived by *kau*. Like [SHAPE], [HUMAN] is a feature that may be part of a word’s *Seinsart* or may be introduced by a nominal aspect marker (but whereas [SHAPE] is introduced by an inner aspect marker, [HUMAN] is introduced by an outer aspect marker, namely *kau*, along with collectiveness).

The foregoing discussion of *kau* suggests that it is distinguished, featurally, from *’ū* by the presence of the feature [HUMAN]. The projection of outer aspect with no featural specification, spelled out as *’ū*, indicates a non-human, collective set. The projection of outer

¹⁴²Otsuka (p.c.) has suggested the possibility of treating such phrases as compound nouns, in which *kau* is the head, meaning something like ‘people’ and the following word (*hiva*, *malanga*, *lotu*, *mahaki*, etc.) is a modifier. The singulative counterpart to, e.g., *kau hiva* ‘singers/choir’ is *be tangata hiva* ‘singing man’ or *fefine hiva* ‘singing woman;’ analyzing *kau* as a noun on par with *tangata* or *fefine* would allow *kau hiva* and *tangata/fefine hiva* to have the same syntactic structures. Unlike *tangata* ‘man’ and *fefine* ‘woman,’ however, *kau* never occurs alone as a noun, so such an analysis would require it to be a bound root. Google searches for *kau tangata hiva* and *ngaahi tangata hiva* yield about 100 results for the former and none for the latter, suggesting that the compound *tangata hiva*, like *tangata* and other [+HUMAN] nominals, cannot be pluralized directly but must, rather, be merged with *kau*. Thus, *kau* imparts to *hiva* not only animacy and humanness but also a different syntactic structure than *tangata* or *fefine* – one which allows Merge with a number marker. On the other hand, Otsuka (p.c.) notes the allowability of phrases such as *fanga ki’i kau leka* ‘children/little ones’ in which *kau leka* does seem to function as an atomic noun (or NP), preceded by the pronominal modifier *ki’i* and the Aspect marker *fanga*. This, she notes, suggests that possibility of two similar morphemes with the form *kau* – one a bound nominal root, and the other a marker of nominal aspect.

Similar issues arise in the analysis of the Niuean plural marker *tau*, as discussed by Massam (2009). Prescriptively, *tau* can co-occur with collective particles but is in complementary distribution with quantifiers and individuators, and on this basis Massam (2009) analyzes it as a true number marker in the sense of Borer (2005) – merged in and assigning range to DIV. She notes, however, that in practice, *tau* can occur with individuators, and she proposes that in such cases, it is actually functioning as a collective particle, merged in COLL. Collective particles, including *tau* in this position, can move to DIV in the absence of another range assigner (indivuator) (Massam 2009:688). Massam (2009:690-691) also notes that *tau* was historically a lexical item meaning ‘count,’ ‘cost,’ and ‘year,’ and that some grammarians treat *tau* as a nominal root whose complement N is a modifier – similar to the nominal-compound derivation of *kau hiva* suggest by Otsuka.

For now, I set aside the problem of whether *kau* is always a nominal aspect marker or if it may also function as a bound nominal root and whether it might sometimes be merged in N and move to Aspect. An investigation of these issues is warranted, but I leave it for future research.

aspect with [HOMOGENEITY], spelled out as \emptyset , indicates a non-human, singulative set. Finally, the projection of outer aspect with [HUMAN], spelled out as *kau*, indicates a human, collective set. If [HUMAN] is absent in the *Seinsart* of the noun, it can thus be introduced via outer aspect. If [HUMAN] is present in the *Seinsart* of the noun, and outer aspect is projected, [HUMAN] must also be present in outer Asp⁰. This accounts for the ungrammaticality of both the collective aspect marker *'ū* and the null Singulative aspect marker with [HUMAN] nominals.¹⁴³

The situation with *fanga* is harder to define in terms of featural specification. It is used as the marker of collective outer aspect when the nominal contains [ANIMATE] but not [HUMAN] as part of its *Seinsart*, when *ki'i* 'small' precedes the noun, or when the nominal contains both [ANIMATE] and [HUMAN] and the speaker wishes to express affection towards its referent. One possibility is that *ki'i* is an inner aspect marker with the feature [DIMINUTIVE] and that *fanga* also has the features [DIMINUTIVE]¹⁴⁴ and [ANIMATE]. Thus, just as *kau*, which has the feature [HUMAN] must be used when the complement of outer Asp⁰ also contains [HUMAN], so *fanga*, with the features [DIMINUTIVE] and [ANIMATE], must be used when the complement of outer Asp⁰ has the features [DIMINUTIVE] and [ANIMATE]. Furthermore, just as [HUMAN] nominals cannot be singulative set nouns, because no aspect marker contains both [HOMOGENEITY] and [HUMAN], diminutive and non-human animate nominals cannot be singulative set nouns because no aspect marker contains [HOMOGENEITY], [DIMINUTIVE], and [ANIMATE].

Another language in which animacy seems to be associated with aspect is Blackfoot.

Wiltschko (2009), adopting Rijkhoff's notion of nominal aspect but formalizing it somewhat differently, proposes that in languages such as English, where a mass/count distinction is

¹⁴³The precise means by which [HUMAN] is required in outer Asp⁰ when it is present on N⁰ is unclear. It does not seem to be an agreement relation, since it can appear on outer Asp⁰ when the nominal is unspecified for humanness, as in *kau hiva* 'choirs,' and it can be present in N⁰ when outer aspect is not projected (as in any nominal which refers to a single human).

¹⁴⁴Recall from the discussion of diminutive determiners in Chapter 2 that the feature [DIMINUTIVE] in Tongan can be used to express either small size or the speaker's affection.

grammaticalized, there exists a binary feature [\pm BOUNDED], found on (inner) Asp^0 , which can turn an inherently mass noun into an inherently count one. This corresponds, essentially, to Rijkhoff's [\pm HOMOGENEITY] feature, which I place in outer Asp^0 . She further contends that it is not always the mass/count distinction which determines countability, proposing that in Blackfoot, the relevant feature of Asp^0 is animacy. Both animate and inanimate nouns are countable in Blackfoot, but the singular and plural markers differ according to the value of a [\pm ANIMATE] feature on (inner) Asp^0 . She supports this analysis with evidence that animacy in Blackfoot is encoded in a higher syntactic position than n^0 : The latter is the locus of nominalizers, and some nominalizers in Blackfoot are not specified for animacy. She contrasts this with German, wherein n^0 – and nominalizers – is the locus of gender, arguing from this that the animacy distinction in Blackfoot represents a different kind of nominal classification than gender.

Tongan seems to have a particularly rich nominal aspectual system. In Tongan, outer Asp^0 is the locus not only of [HOMOGENEITY], as in the languages discussed by Rijkhoff, but also of [ANIMATE], as in Blackfoot (Wiltschko 2009), [HUMAN] and [DIMINUTIVE].

4.2.6. Nominal aspect vs. classification

Borer (2005), tackling similar questions to Rijkhoff (1992), approaches the problems of number and measure in a somewhat different way. Preferring a primarily structural approach to one where *Seinsart* is a lexical property of nouns, she proposes a functional projection, $e_{\langle \text{DIV} \rangle}$, which heads a classifier phrase (CL^{max}) and is associated with countability and classification. Essentially, in her account, noun denotations – cross-linguistically – are inherently mass; that is, in the absence of grammatical specification, which is assigned by structure, nominal listemes simply denote “stuff,” and the default interpretation of that is mass (2005:88*n*, 108). The projection $e_{\langle \text{DIV} \rangle}$ serves to portion out this stuff, the denotatum of a noun, into countable measures or individuals; $e_{\langle \text{DIV} \rangle}$ is assigned range by a morpheme merged in the specifier position CL^{max} .

Cross-linguistic variation comes not from the default interpretation of nouns as count or mass as in Chierchia's (1998) proposal, but from the set of morphemes that may be merged in CL^{\max} . In each language, this will be some subset of classifiers, number markers, numerals, quantifiers, and articles, among others. In English, for instance, the plural marker *-s* is in complementary distribution with the singular indefinite article *a* (and *one*), and singular quantifiers (*each, every*) because all of these are merged in Spec, CL^{\max} . The indefinite article or singular quantifier then moves leftward to Spec, #P, where it assigns range (singular) to $e_{\langle\#\rangle}$. The plural marker, on the other hand, remains *in situ* in Spec, CL^{\max} . Cardinals and plural quantifiers (*many, most*) are merged directly into Spec, #P, and their sole function is to assign range to $e_{\langle\#\rangle}$. Mass quantifiers, such as *much*, are likewise merged directly into Spec, #P; the difference between them and plural quantifiers is that mass quantifiers quantify over undivided nominal expressions, *i.e.* those lacking CL^{\max} , whereas plural quantifiers quantify over divided nominal expressions, *i.e.* those with CL^{\max} . Thus, we can classify these elements (in English) as follows: Cardinals, mass quantifiers, and count quantifiers are pure counters, as they only assign range to $e_{\langle\#\rangle}$; indefinite articles and singular quantifiers are simultaneously both dividers and counters, as they assign range, in turn, to $e_{\langle\text{DIV}\rangle}$ and $e_{\langle\#\rangle}$; and the plural marker is purely a divider, as it assigns range only to $e_{\langle\text{DIV}\rangle}$ (Borer 2005:109-113). This accounts for the various complementarities among these elements in English. In discussing other languages, Borer (2005) proposes different types of lexical elements that can assign range to $e_{\langle\text{DIV}\rangle}$ along with their various other functions. Adopting a structural approach to the mass/count distinction and the distribution of individuating and pluralizing elements allows enough flexibility in grammatical systems to generate phrases such as *one water, two waters*, and *too much house* without recourse to multiple lexical entries, simply by allowing any noun to be merged with a or without $e_{\langle\text{DIV}\rangle}$.

The system developed above shares some similarities with Borer's approach to classification, but the analyses differ in some important ways. My approach shares with that of Rijkhoff (1991, 2002) the assumption that nouns can have inherent *Seinsart*. This accounts for the fact that, in Tongan, some nouns – *i.e.* general nouns, such as *moli*, 'orange,' – must merge with a shape-assigning head before they can be marked as denoting a singular or

collective set, pluralized, or modified by a numeral, where as others – set nouns – do not have this requirement. Rather than *classification*, I prefer the term *aspect* because it suggests a broader range of function and because it differs morphosyntactically from those elements that have been associated with the term *classifier* in other languages. Aspect in Tongan includes not only information about homogeneity or countability, but also information about animacy, affection, and form. Furthermore, the term *nominal aspect* suggests an analogy with verbal aspect; this is deliberate on the part of Rijkhoff (2002), who notes that nominal aspect “packages” a noun in much the way the verbal aspect “packages” a verb. I feel that the analogy can be extended; nominal aspect seems to interact with number in a way that is reminiscent of how verbal aspect interacts with tense. Moreover, in Borer’s analysis, plural markers are themselves classifiers and are in complementary distribution with other classifiers. However, as we have seen, the plural marker *ngaahi* in Tongan is not in complementary distribution with the nominal aspect markers.

4.2.7. Collective classifiers and the plural marker in Niuean

Massam (2009) explores a similar question in Niuean. Specifically, she examines the phenomenon of distributed number in that language, whereby number marking is obligatory in NPs but can occur in several different places: on the noun itself (via reduplication or suppletion); via the use of a singular or plural number maker (the singular being null) or quantifier (a grammatical category that includes true quantifiers as well as possessors, numerals, and a singular marker *taha* ‘one’); or via one of a class of *classifying collective particles*.

Like the nominal aspect markers in Tongan, the collective particles in Niuean can occur with or without the plural marker, *tau* (139). When they co-occur, the number marker precedes.

(139) Niuean

- a. *he atu motu*
 LOC.C row island
 ‘in the islands’
- b. *mo e tau atu motu foki he Pasifika*
 and C PL ROW island also LOC.C Pacific
 ‘and the islands of the Pacific’

(Massam 2009:685)

Massam (2009) proposes that the Niuean collective particles merge lower than number but, if the number position is unoccupied, can raise into it. Although they do classify nouns in the sense that certain collective particles are selected by certain nouns, these particles are not true classifiers.

However, while Massam (2009) argues that the collective particles in Niuean are not classifiers, she also argues that a classifier system does exist alongside the number system in the language. She proposes that the particles *e* and *a*, which follow quantifiers and numerals (140), and which have been referred to elsewhere as *linkers*, are best treated as deficient classifiers: They are classifier-like in their function as individuators, but they are deficient in that they do not classify nouns,¹⁴⁵ thus, she refers to them as *individuators*, glossed DIV.

(140) Niuean

- a. *Mate tuai (e) ua e kulī.*
 die PERF ABS.C two DIV dog
 ‘Two dogs died.’
- b. *mai he falu a aelani*
 from LOC.C some DIV island
 ‘from some other islands’

(Massam 2009:678-679)

¹⁴⁵The choice of *e* or *a* depends not on the following noun but on the preceding quantifier (or numeral). See Massam (2010) for elaboration.

Massam (2009) notes that the classifiers *e* and *a* are in complementary distribution with *tau* because both individuators and number particles are merged in DIV^0 . Collective particles are merged lower, in COLL^0 , but when no element is merged directly into DIV^0 , the collective particles move leftward into that position to assign range to it. This allows collective markers to serve an individuating (and pluralizing) function when *tau* is absent.

4.2.8. The problem with *ongo*

The Tongan dual marker, *ongo*, presents an interesting challenge for the distinction between number and nominal aspect in Tongan. It is in complementary distribution with *ngaahi* and thus seems to be, like *ngaahi*, a true number marker. However, it also exhibits characteristics of a nominal aspect marker. For instance, it can be used with [HUMAN] nouns, whereas *ngaahi* cannot, and it suggests that two things are naturally a pair (141a).

Recall that [HUMAN] and [ANIMATE] nominals in Tongan cannot be pluralized directly with *ngaahi*; in the current analysis, this is because they are set nouns which are incompatible with the null singulative aspect marker. They can be marked as non-singulative (hence, ontologically non-singular) with the collective aspect markers *kau* (for [HUMAN] nominals) or *fanga* (for [ANIMATE]) nominals. They can also be marked as dual with *ongo* (141).

- (141) *kuo omi 'a e ongo talavou*
 PERF come ABS SPEC DU youth-DA
 'The two young men have come.'

(adapted from Churchward 1953:28)

My consultant LMK accepts *ha ongo sū* in reference to two matching shoes but rejects it in reference to two shoes chosen at random from a pile (142). Despite this, she does not accept **ha ngaahi ongo sū* (intended meaning '(some) pairs of shoes'), emphatically stating that *ngaahi* and *ongo* can never co-occur "because they both mean it's plural" (143a); this

intuition is a strong indication that *ngaahi* and *ongo* are members of the same grammatical category. To denote multiple pairs, she prefers *hoa* ‘pair’ as in (143b).

(142) a. *ha ongo sū*
 NONSPEC DU shoe
 ‘two (matched) shoes’/ ‘a pair of shoes’
 # two unmatched shoes

b. *ha sū 'e ua*
 NONSPEC shoe C two
 ‘two shoes’

(FN:LMK 2009, 2012)

(143) a. **ha ngaahi ongo sū*
 NONSPEC PL DU shoe
 Intended: ‘some pairs of shoes’)

b. *ha ngaahi hoa sū*
 NONSPEC PL pair shoe
 ‘some pairs of shoes’

(FN:LMK 2012)

Moreover, *ongo* is not limited to nominal expressions which denote paired items. In (144), it is used to refer to two fish, not necessarily a pair.

(144) *peá ne tufaki foki 'a e ongo mata'i iká*
 COMP 3.SG distribute also ABS SPEC DU ASP fish
 ‘and he divided the two fish among them’

(adapted from Ma'ake 6:41)

Thus, *ongo* resembles both a nominal aspect marker and a number marker. Like an aspect marker, it can merge with an unspecified set noun. Like a number marker, it is in complementary distribution with the plural marker *ngaahi*. Its pairwise connotation seems to be sensitive to context. For now I set aside the challenges posed by *ongo* and treat it as a true

number marker – in the same class as *ngaahi*, and occupying the same syntactic position, on the basis of their being in complementary distribution. It is likely, however, that it is somehow both, occupying outer Asp⁰ and #⁰ either alternately or simultaneously. Further study of *ongo* is warranted.

4.3. Internal Syntax of Modifying Numerals

In addition to interacting with number, nominal aspect in Tongan interacts with numerals in interesting ways, and these provide important clues about their position within nominal expressions. I look at this interaction in section 4.4., showing that numerals in Tongan are right-adjoined to outer AspP. Before examining the external syntax of Tongan numerals, however, I examine their internal structure. Modifying numerals in Tongan are transparently syntactically complex; I propose that they are highly reduced clauses, in which the numeral is a predicate and its argument is PRO, controlled by the AspP to which it is adjoined.

I begin this section with an overview of numeral constructions in Tongan, showing that cardinal modifying numerals are clausal. Although they modify a nominal in a manner reminiscent of relative clauses, I argue that they are a different kind of modifying clause which is highly deficient, lacking arguments altogether. Following this, I provide some examples of both ordinary and “special” numeral constructions, showing that the pre-nominal particles in the latter are in fact nominal aspect markers, and that the semantic interplay of aspect and numeral in these constructions provides evidence that the numeral clause is adjoined to outer AspP.

Tongan numerals do not modify nouns directly but, rather, are embedded in a deficient clause, headed by a linker-like particle which I argue is the tense-aspect-mood particle (TAM), *ʻe*, as exemplified in (145). These numeral clauses always follow the head nominal, but their position is somewhat variable. In some cases, they appear at the far right edge of

nominal expressions, after demonstrative clitics and the definite accent; in others, they precede these elements.

- (145) *ha ngaahi kato 'e nima*
 NONSPEC PL basket SBJV five
 'five baskets'

(adapted from Churchward 1953:32)

4.3.1. Numerals as predicates

In order to make the case that numeral constructions in Tongan are clausal, I begin by showing that the cardinal numerals themselves can function as predicates, but not as simple modifiers. This is not a trivial matter: Most lexical words in the language are flexible and can serve either as nominals or as predicates (see esp. Tchekhoff 1981 and Broschart 1995 for discussion). Generally, lexical words in Tongan function as nominals after a determiner (146a) and as verbal predicates after a Tense-Aspect-Mood marker (TAM) (146b). Many also function as modifiers if placed in the appropriate position within an NP or a VP (146c). There are, however, restrictions on the interpretation of certain lexemes in certain position (147, 148).

- (146) a. *hono motu'á*
 SPEC+GEN_{OBJ}+3.SG old-DA
 'his age'
- b. *kuo 'osi motu'a*
 PERF already old
 '(It) has already become old.'
- c. *he fale motu'á*
 SPEC house old-DA
 'the old house'

(Broschart 1995:70)

- (147) a. *faka'uli*
drive
'to drive'
- b. *ha faka'uli*
NONSPEC drive
'a driver'

(Broschart 1995:77)

- (148) a. *tuitui*
sew
'to sew'
- b. *ha tuitui*
NONSPEC sew
'that which has been sewn'
* 'someone who sews'

(Broschart 1995:77)

Numerals exhibit some of the flexibility of other lexical items. With the exception of *taha* ('one') and its counterpart *'uluaki* ('first'), all numerals have both cardinal and ordinal readings, and both interpretations are available in various distributions and functions.

Both cardinal and ordinal interpretations are available for numerals as matrix predicates or as the heads of nominal phrases. Thus, in (149) the predicate *'oku ua* can mean 'two' or 'second.' Similarly, the numerals *afe* ('thousand') and *mano* ('ten thousand') are used as nouns denoting quantities in (150a), whereas *tolu* ('three') is used as a noun meaning 'the third one' in (150b).

- (149) a. *'Oku ua 'a e kalasi aho-ni*
PRES two ABS SPEC class day this
'There are two classes today' / 'The classes today are two'

- b. *'Oku ua 'i he kalasi.*
 PRES two DAT SPEC class
 'S/he is second in the class.'
 (FN:LMK 2009)
- (150) a. *Na'a nau tupulekina mei he afé ki he manó*
 PAST 3.PL increase from SPEC 1000-DA to SPEC 10,000-DA
 'They increased from the thousands to the tens of thousands.'
- b. *hono tolu ('o e himi)*
 GEN_{OBJ}+3.SG three (GEN_{OBJ} SPEC hymn)
 'the third one (of the hymns)'
 (adapted from Churchward 1953:174)

Nevertheless, there are limits to this flexibility. Only the ordinal reading is available for numerals when they are used as modifiers pre-nominally (151) or post-nominally without 'e (152), and only the cardinal reading is available for post-nominal modifiers with 'e (153). Thus, whereas both cardinal and ordinal numerals can serve as nominal arguments (if they follow a determiner) or verbal predicates (if they follow a tense marker), only ordinal numerals can directly modify a noun.

- (150) *ko e uofulu mā fitu ta'u eni 'o e pule 'a Kuini Sāloté*
 PRED SPEC twenty and seven year this GEN_{OBJ} SPEC reign GEN_{SBJ} Queen Charlotte
 'This is the **twenty-seventh** year of the reign of Queen Charlotte.'
 (adapted from Churchward 1953:174)

- (151) a. *kalasi ua*
 class **two**
 'second class' or 'grade **two** (in school)'
 ≠ 'two classes'

- b. *Sione Ua*
Sione two
 ‘(King) John II’
 ≠ ‘two Johns’
 (FN:LMK2009)
- (152) a. *kalasi 'e ua*
 class SBJV two
 ‘two classes’
 ≠ ‘class two’ or ‘grade two’
- b. *Sione 'e ua*
Sione SBJV two
 ‘two Johns’
 ≠ ‘John II’
 (FN:LMK 2009)

4.3.2. Numeral constructions as clauses

As noted above, cardinal numerals, when used as modifiers in Tongan, do not modify nouns directly but instead are embedded within a clausal construction. Cardinal numerals, when used to modify a noun, appear to the right of the head nominal, preceded by a particle, *'e*, as seen above in (152b) and (153b) as well as in (154), below.

- (154) a. *ha ngaahi kato 'e nima*
 NONSPEC PL basket 'e five
 ‘five baskets’
- b. *ha 'ū kato 'e nima*
 NONSPEC ASP.COLL basket 'e five
 ‘five baskets’
- c. *ha kato 'e nima*
 NONSPEC basket 'e five
 ‘five baskets’

(adapted from Churchward 1953:32)

The syntactic category of 'e – and thus the structure of these numeral phrases – is not immediately apparent.¹⁴⁶ It bears resemblances both to the ergative case-marking particle 'e and to classifiers, but I propose that it is neither of these. Rather, it is a complementizer, and post-nominal numerals in Tongan are clausal. The particle 'e is formally identical to the ergative case-marking particle.

In terms of its form, 'e resembles an ergative case-marking particle; however, it is hard to imagine how a numeral in a nominal expression could receive ergative case. Even if the head nominal were a predicate, the construction would be intransitive; moreover, when numerals are used as nominals, as seen in (148) above, they require a determiner.

In terms of its surface position, pre-numeral 'e is suggestive of classifiers. Massam (2009) treats a similar particle in Niuean as an individuating classifier – one which individuates but does not classify – noting that it occurs not only with numerals but also with certain quantifiers, and that it is in complementary distribution with the plural marker *tau*. However, this analysis does not work well for Tongan 'e: It is not in complementary distribution with *ngaahi* or *ongo*, nor with the nominal aspect markers which fulfill the role of individuation.

If 'e is indeed a complementizer, it is not limited to numeral constructions; rather, it is one of the two morphs of the Tense-Aspect-Mood marker (TAM) usually translated as 'future' (155) (Churchward 1953:37-40). The other allomorph, *te* is used when a clitic pronoun immediately follows; 'e is used elsewhere.

¹⁴⁶ Similar particles have been referred to elsewhere as *linkers*. To me, this term seems more descriptive than theoretical or explanatory, and it leaves unanswered questions about the syntactic category of such particles and whether they are of a single category cross-linguistically. The broader, cross-linguistic questions are beyond the scope of this dissertation, but I endeavour to show here that in Tongan, at least, the linker-like particle may be a member of another syntactic category – specifically, complementizers. Massam (2009) provides evidence that the superficially similar linker in Niuean is best treated as a classifier in the sense of Borer (2005), *i.e.* a morpheme which divides the denotatum of a nominal into countable portions. The different distributions of Niuean *e/a* and Tongan 'e provide evidence that even apparently similar linkers in closely related languages might not form a natural class.

- (155) *'E lea 'a Pita.*
'e speak ABS Pita
 'Pita will speak.'

(adapted from Churchward 1953:37)

Although he refers to *'e/te* as a marker of future tense, to distinguish it from *'oku* (present) and *na'e/na'a* (past), Churchward (1953:42, 233-234; 1959:475) also notes that it may be used “merely as a predicative sign,” *i.e.* without the sense of futurity. Specifically, he lists examples including those in (156), in which it introduces relative clauses whose antecedents are indefinite and whose existence is questioned, denied, or rare.

- (156) a. *Na'e tokolahi ha kakai 'e o atu?*
 PAST many NONSPEC people 'e go
 'Were there many people who went?'
- b. *'Oku 'ikai ha taha mou'ui 'e ta'e 'i ai ha'ane fa'e.*
 PRES NEG NONSPEC one alive 'e lack DAT 3.SG GEN_{SBJ} .3.SG mother
 'There is no one living who does not have a mother.'
- c. *'Na'e tātātaha ha manu 'e mo'ui*
 PAST RED-one NONSPEC animal 'e live
 'Only here and there did an animal survive.'

(adapted from Churchward 1953:234)

Another context in which *'e/te* is used without a sense of futurity is after *'oua*, a negative verb which is used to express prohibitions (Churchward 1953:58-59; 1959:556, 567). The complement of *'oua* is a finite clause headed either by *'e/te* or by *na'e/na'a* (PAST), as in (157).

- (157) a. *'Oua te ke hū ki hono fale.*
 NEG **te** 2.SG go DAT SPEC+GEN_{OBJ}+3.SG house
 'Do not go into his house.'
- b. *'Oua 'e hū ki hono fale.*
 NEG 'e go DAT SPEC+GEN_{OBJ}+3.SG house
 'Do not go into his house.'

(adapted from Churchward 1953:58)

In earlier work (Macdonald 2006), I have argued that TAMs are complementizers which, assuming the CP of Rizzi (1997), are merged in Fin^0 .¹⁴⁷ Because the TAM *'e* is primarily associated with irrealis contexts, including but not limited to future time, I treat it as a subjunctive complementizer, (glossing it SBJV)¹⁴⁸. I further propose that the particle *'e* in numeral constructions is this same TAM.

It is somewhat surprising to find a subjunctive complementizer used to mark non-irrealis numeral constructions. However, numeral constructions are not the only ones in which *'e* occurs without conveying irrealis modality. Churchward (1953) notes the following alternations (158, 159) in which *'e* (in the (b) examples) introduces a relative clause in a non-irrealis, past context.

¹⁴⁷Macdonald (2006) notes that in the case of an embedded clause with a different tense than the matrix clause in which it is embedded, the TAM may be preceded by another complementizer. In this case, I assume that the external complementizer is merged in Force^0 . In matrix clauses or embedded clauses with a TAM but no other complementizer, it is possible either that no Force^0 is projected or that the TAM moves leftward from Fin^0 to Force^0 . An investigation of this question falls outside the scope of this dissertation but warrants future research.

¹⁴⁸*E* is one of two TAMs with subjunctive-like qualities. The other, *ke*, is usually glossed SUBJUNCTIVE (Chung 1978, Dukes 1996, Otsuka 2000, Ball 2008, Ahn 2012); *'e* is usually glossed FUTURE (Dukes 1996, Otsuka 2000, Ball 2008). However, as noted above, *'e* can be used without a sense of futurity, particularly when it introduces an embedded (subordinate or relative) clause. Embedded *'e*-clauses are remarkably similar to *ke*-clauses, although their distributions differ. Both *'e* and *ke* have irrealis senses and are used to introduce complement clauses of the negative predicates *'oua* 'do not' *'ikai* 'not' and *te'eki* 'not yet.' *Ke* appears in control-like contexts in which the matrix verb indicates desire, intent, or purpose (see Dukes 1996: 111-118 for an argument that these are not control constructions and Otsuka 2000:186-193 for an argument that they are). *'E* is used to introduce relative clauses modifying indefinite (or non-referential) nominals (Churchward 1953:234). Embedded *ke*-clauses exhibit what Otsuka (2000) calls "tense anaphora," taking their temporal interpretation from the matrix TAM; I would argue based on data from Churchward (1953) that *'e*-clauses do the same. Otsuka (2000:186-193) analyzes *ke* as a subjunctive TAM with both finite and infinitival characteristics, likening *ke*-clauses to the "inflected infinitives" of European Portuguese (citing Raposo 1987). She also cites Churchward's (1953:52) observation that *ke* is prospective or forward-looking and "usually equivalent either to 'to,' the sign of the infinitive, or to 'that' followed by 'may,' 'might,' or 'should.'" Dukes (1996:89) notes that both *'e* and *ke* mark "noncompleted or irrealis" propositions; later (1996:113, 119) he proposes that both are finite but that *ke* is subjunctive and *'e* is "future, noncompleted." Krupa (1982:109-110) treats *ke* as a "subjunctive-purposive" mood particle and *'e* as a marker of non-past tense. Yet while *'e* seems to be more unambiguously finite in most cases, it seems to be non-finite in numeral clauses. Because of its irrealis sense, its temporal underspecification, and its ability to introduce certain non-finite embedded clauses, I treat *'e* as a subjunctive TAM and gloss it accordingly. Because an analysis of *ke* does not fall within the scope of this dissertation, and to distinguish it from *'e*, I gloss it simply as COMPLEMENTIZER.

- (158) a. *Na'a nau langa taki tolu 'a e fale.*
 PAST 3.PL build each three ABS SPEC house
 'They built three houses each.'
 (*lit.* 'They built-three-each the houses.')
- b. *Na'a nau taki tolu 'a e fale 'e langa*
 PAST 3.PL each three ABS SPEC house SBJV build
 'They built three houses each.'
 (*lit.* 'They three-eached the houses that (they) built.')
- (adapted from Churchward 1953:178)
- (159) a. *Kuo nau 'omi taki tolu 'a e kato.*
 PAST 3.PL bring each three ABS SPEC basket
 'They brought three baskets each.'
 (*lit.* 'They brought-three-each the baskets.')
- b. *Na'a nau taki tolu 'a e kato 'e 'omi.*
 PAST 3.PL three each ABS SPEC basket SBJV bring
 'They brought three baskets each.'
 (*lit.* 'They three-eached the baskets that (they) brought.')
- (adapted from Churchward 1953:178)

Further evidence that modifying numerals in Tongan are clausal comes from the fact that, like other clauses, they can be nominalized, and their “subjects” – *i.e.* the nouns they modify – can be realized as possessors (161, *cf.* 161).

- (160) *'Oku ou fiefia 'i he tokotolu 'a 'eku fānau.*
 PRES 1EX.SG happy DAT SPEC CL-three GEN_{SBJ} GEN_{SBJ} +1EX.SG children¹⁴⁹
 'I am happy that I have three children.'
 (*lit.* 'I am happy in the being-three of my children.')
- (FN:LMK 2012)

¹⁴⁹*Fānau* 'child, offspring' (Churchward 1959:139) seems to have an inherent plural or collective sense. It appears to be derived by suppletion from the intransitive verb *fanau*, which is defined by Churchward (1959:139) as 'to have a child or children or offspring.' Churchward considers *fānau* to be "less respectful than *tamaiki*;" but my consultant, LMK, uses *fānau*, rather than *tamaiki* when referring to her own (adult) children and says, "it means I gave birth to them."

- (161) *'Oku ou fiefia 'i he ma'u 'o e faingamālie koeni*
 PRES 1EX.SG happy DAT SPEC have GEN_{OBJ} SPEC convenience now
ke fakataha mo kimoutolu.
 COMP meeting with 2.PL
 'I am happy to have the convenience to meet with you now.'
 (*lit.* 'I am happy in the having of the convenience now to meet with you.')
- (Tonga Ministry of Information and Communications 2012)

In (160), the nominalized clause is *he tokotolu 'a 'eku fānau* 'the being-three of my children.' This corresponds to the nominalized clause *he ma'u 'o e faingamālie...* 'having the convenience...' in (161). The nominalized predicate in (160) is *he tokotolu*¹⁵⁰ 'the being-three' and its possessor subject is *'a 'eku fānau* 'of my children.'

4.3.3. The multiple deficiencies of numeral clauses

If numeral constructions are clausal in Tongan, the next question is what kind of clause they are. They are highly reduced in comparison not only to matrix clauses but also to relative clauses, licensing no overt arguments and allowing no choice of Tense-Aspect-Mood (TAM) particles. I propose that they are a *sui generis* type of highly reduced clauses, lacking much of the architecture found in matrix clauses. They lack *vP* and *TP* projections, and their *CP* is deficient. As a result, they are unable to assign case, can license no overt arguments, and are restricted to one particular TAM.

One possibility that must be entertained is that numeral clauses in Tongan are a subtype of relative clauses. Like relative clause, numeral clauses modify nominal expressions. In their grammar of Samoan, Mosel and Hovdhaugen (1992:318) treat numeral constructions in that

¹⁵⁰The pre-numeral particle *toko* is mandatory with any cardinal numeral that modifies an animate noun; according to my consultant, this includes not only those which are [+HUMAN] but also nouns referring to pets, livestock, and other animals. A more detailed discussion of *toko* (and the related prefix *toko-*) follows in section 4.3.3.

language – which are essentially identical to Tongan numeral constructions (162) – as “a special kind of relative clause,” and they propose that the pre-numeral particle *e* in that language is a “the general tense-aspect-mood marker,” glossed GENP.

(162) Samoan

Sa fau=siae e Tagaloaalagi fale e tolu ...
 PAST build=ES ERG Tagaloaalagi house **GENP three**
 ‘Tagaloaalagi built three houses.’

(Mosel & Hovdhaugen 1992:318)

Like Mosel and Hovdhaugen (1992), I treat numeral constructions as clausal and the pre-numeral particle as a TAM. I differ from them, however, in treating them as a distinct category of modifying clause rather than as a subtype of relative clauses. It is possible that the choice is simply one of nomenclature, as Mosel and Hovdhaugen (1992) do not offer a proposal for the syntactic structure of these constructions. My choice to treat them as distinct comes from the fact that Tongan numeral clauses are even more deficient than relative clauses. They do not allow resumptive pronouns where relative clauses allow – or even require – them, and, unlike relative clauses, they do not allow any choice in Tense-Aspect-Mood (TAM) particles. Further evidence may come from within NP, although this is as yet inconclusive. There is considerable variation in the placement of relative clauses as well as in that of numeral clauses. The options available to the two types of modifying clauses appear to be different, but more data is needed in order to say this with certainty.

As discussed in Chapter 3, resumptive pronouns in Tongan relative clauses are sometimes required, sometimes disallowed, and sometimes optional, depending on the argument type (A, S, O, or oblique) of the relativized element. In relative clauses, a relativized intransitive argument (S) is obligatorily realized as a gap if it is third-person singular, but if it is non-

singular (or non-third-person), it is optionally realized as a resumptive pronoun (Chung 1978).¹⁵¹ This use of a resumptive is accepted by my consultant, as shown in (163), below.

- (163) *Ko e kau fefine 'e tokotolu te nau lea.*
 PRED SPEC ASP woman SBJV CL-three SBJV 3.PL speak.
 ‘These are the three women who will speak.’

(FN:LMK 2012)

The argument of a numeral clause, which corresponds to the head nominal which that clause is modifying, is the single argument of an intransitive predicate (S) and is normally in the third person. Thus, if numeral clauses were relative clauses, one would expect the relativized element to be a third-person argument (corresponding to the head nominal) of an intransitive predicate (thus, S or O). When it is non-singular, it should have the option of being realized as a resumptive pronoun inside the numeral clause. As noted in Chapter 3, pronouns are dispreferred in Tongan with inanimate antecedents, which would rule them out for many relative clauses, but not for examples such as (163), in which the argument of the numeral is both non-singular and animate. The ungrammaticality of (164) shows that this is not the case, at least for my consultant.

- (164) **Ko e kau fefine te nau tokotolu te nau lea*
 PRED SPEC ASP woman SBJV 3.PL CL-three SBJV 3.PL speak.

(FN:LMK 2012)

One potential solution to this problem is to suggest that numerals are unaccusative, and thus that their arguments are not S but O. In relative clauses, resumptive pronouns are disallowed

¹⁵¹ Resumptive pronouns in relative clauses are always subject-like clitics, which can never instantiate O arguments. Recall also from section 3.5 that there is a general dispreference for third-person singular S arguments to be realized as clitic pronouns (Table 13). Chung (1978) and Otsuka (2002, 2006) agree that relative clauses in Tongan require resumptive pronouns when the relativized element is a transitive “subject” (A) and disallow them when the relativized element is a transitive “object” (O). They differ on the allowability of resumptive pronouns when the relativized element is an intransitive subject (S). Otsuka (2002, 2006) claims that it is always ungrammatical, whereas Chung (1978) claims that it is allowed so long as the relativized element is not third-person singular. My consultant’s judgements (e.g. (162)) seem to support Chung (1978).

across the board when the relativized element is O. If this were the case, however, supporting evidence should be found in nominalizations, where O and S arguments are realized as different types of possessors. If the argument of a nominalized numeral clause is realized as an 'o-type possessor, the case could be made that it is an internal, rather than external, argument – *i.e.* O rather than S. If so, one would expect the relativized element in a nominalized numeral clause to be realized as an object possessor – *i.e.* one marked with the genitive particle 'o. However, this again is not borne out by my consultant's judgements; the possessor argument of a nominalized numeral clause is obligatorily marked with 'a, the subjective possessive particle (165).¹⁵²

- (165) a. 'Oku ou fiefia 'i he tokotolu 'a 'eku fānau.
 PRES 1EX.SG happy DAT SPEC CL-three GEN_{SBJ} GEN_{SBJ} .1EX.SG children
 'I am happy that I have three children.'
 (*lit.* 'I am happy in the being-three of my children.')
- b. *'Oku ou fiefia 'i he tokotolu 'o 'eku fānau.
 PRES 1EX.SG happy DAT SPEC CL-three GEN_{SBJ} GEN_{SBJ} .1EX.SG children
 (FN:LMK 2012)

Further evidence that numeral clauses in Tongan are distinct from relative clauses comes from the fact that the former must always start with the TAM 'e, whereas the latter may start with any of the TAM markers. The examples in (161-164) show relative clauses introduced

¹⁵²Otsuka (2000:176-179) argues that almost all verbs in Tongan (the exceptions are aspectual verbs and one-place predicates taking sentential arguments), when used intransitively, seem to be unergative. S arguments, regardless of Θ -role, behave like A arguments in nominalizations and with regards to cliticization.

by *na'e* (166), *'oku* (167), *ke* (168),¹⁵³ and *te* (allomorph of *'e*) (169). Modifying numerals of nominal expressions are always and only preceded by *'e*.

- (166) *'Oku 'i fē 'a e puha na'e toó?*
 PRES DAT where ABS SPEC box PAST fall
 'Where is the box that fell?'

(Chung 1978:38)

- (167) *Meimei ko e 'aho kotoa pē 'oku i ai ha ni'ihī oku nau puke.*
 almost PRED SPEC day all EMPH PRES exist NONSPEC some PRES 3.SG sick.
 'Almost every day, there are some who are sick.'

(adapted from Churchward 1953:205)

- (168) *'Oku 'i fē 'a e fale ke tau holokí?*
 PRES DAT where ABS SPEC house COMP INC.PL demolish
 'Where is the house that we are to demolish?'

(adapted from Churchward 1953:53)

- (169) *'Omai pē ha me'a te ke loto ki ai.*
 bring EMPH NONSPEC thing SBJV 2.SG want DAT RESUMPT-DA
 'Bring whatever you like.'

(adapted from Churchward 1953:270)

¹⁵³The TAM *ke* is used to introduce relative clauses with future or unspecified temporal reference, as well as to introduce what Otsuka (2000) argues are non-finite clausal complements of verbs. She treats *ke* as a subjunctive complementizer, glossing it 'that' (Otsuka 2000:186-193). She notes that clauses introduced by *ke* have both finite and infinitive characteristics: Like finite clauses, their subjects can be overt DPs and trigger subject-agreement in the few Tongan verbs that exhibit it. Like infinitives, they are temporally unspecified, and their subjects may be PRO (although see Dukes 1996:111-119 for a case against analyzing these null arguments as instances of PRO). Otsuka (2000) also cites Churchward's (1953:52) observation that *ke* is prospective or forward-looking and "usually equivalent either to 'to,' the sign of the infinitive, or to 'that' followed by 'may,' 'might,' or 'should.'" Noting that *ke*-clauses resemble the "inflected infinitives" of European Portuguese (Otsuka 2000:190 citing Raposo 1987), she proposes that *ke* is merged in T⁰ (the same position as other TAMs in her analysis) but is [-TENSE] and thus takes its temporal reference from the matrix clause. *'E* differs from *ke* in its distribution, but perhaps not in its semantics: Like *ke*, *'e* heads embedded clauses selected "often selected by aspectual predicates, negative predicates and other predicates whose meaning inherently requires a noncompleted or irrealis complement" (Dukes 1996:89). Unlike *ke*, it can introduce matrix clauses, and in these cases it is interpreted as a marker of futurity, but it is often used, as described above, to indica

While the impossibility of pronouns within numeral clauses does not rule out the possibility that they may be reduced relative clauses, this restriction of the TAM to *'e* may do so. While it is unclear to me what, in a language which lacks relative pronouns and *wh*-movement generally, distinguishes unreduced from reduced relative clauses, an example of a reduced relative clause is offered by Ahn (2012). Shown here as (170), it is headed by the perfective TAM *kuo*.¹⁵⁴

(170) *he ta'u kuo 'osi-na*
 SPEC year PERF finish-DEM.2
 'The year having just finished.'

(Ahn 2012:7n)

External syntax, *i.e.* the placement of numeral clauses in Tongan nominal expressions relative to other modifiers such as adjectives and relative clauses, may provide further evidence for or against a relative-clause analysis. So far, the data seems to be mixed. Numeral clauses and what I call *light* relative clauses (LRCs) can appear close to the head nominal, before *Dem*⁰. Numeral clauses can also appear to the right of *Dem*⁰, as can what I call *heavy* relative clauses (HRCs). While the rightward position of numerals may be identical to that of HRCs, there is evidence that their leftward position may not be the same as that of LRCs. Rather than expand on this issue here, I will return to it in sections 4.4 and 4.5, where I discuss the positions of numeral clauses within nominal expressions and the relation that holds between numerals and nominal aspect. First, I return to the question of the internal structure of numeral clauses and present a proposal for their syntactic representation.

It is clear that whatever type of clause the numeral construction in Tongan is, it is highly reduced and never allows an overt argument. It is worth noting here, however, that this is not due to an EPP deficiency. I have argued elsewhere (Macdonald 2005a,b; 2006) that Tongan lacks an EPP_D, as Massam (2001a,b; 2010) has argued for Niuean. Thus, there is no

¹⁵⁴In fact, it is not clear to me that the relative clause in (170) is reduced. As noted above, third-person singular, absolutive S arguments (such as *he ta'u* 'the year' in this example) are obligatorily realized by a gap when they are relativized in Tongan.

requirement for every clause to have a subject. Indeed, there are several predicates in Tongan which, even in matrix clauses, lack arguments (171).¹⁵⁵

- (171) a. *Na'e tu'uapo.*
 PAST midnight
 'It was midnight'
- b. *Na'e mofuike.*
 PAST earthquake
 'There was an earthquake.'
 (*lit.* 'Earthquaked.')
- c. *'Oku efiafi.*
 PRES afternoon
 'It is afternoon.'
- d. *'Oku 'afua.*
 PRES fine
 'It (the weather) is fine.'

(adapted from Churchward 1953:70)

Unlike these non-argument-taking predicates, however, numeral predicates do license a single overt argument in matrix clauses. This suggests that, like other one-place predicates, they assign a Θ -role. Thus, the prohibition of overt of arguments in modifying numeral clauses seems to be a characteristic not of the numeral predicate but of the clause type. If numerals assign a Θ -role to their argument in matrix clauses, they ought to require an

¹⁵⁵Otsuka (2000:65-68), who argues in favour of a clausal EPP_D in Tongan, proposes that sentences such as those in (170) do have an expletive, impersonal *pro* (as contrasted with the personal *pro*-3S found in *pro*-drop contexts, which alternates with overt 3S pronouns). It is likewise possible to adopt a *pro* analysis of the missing arguments in numeral clauses; however, it is more economical not to do so, given the assumptions made here. Adopting a *pro* analysis of numeral clauses would require a further explanation of why this *pro* cannot alternate with personal pronouns when it has a human referent.

argument at LF in modifying clauses. Something about the structure of numeral clauses and/or the argument itself seems to prevent it from being realized at PF.¹⁵⁶

This leads us back to the question of what precludes overt arguments in numeral clauses. In short, I propose that numeral clauses in Tongan are non-finite and, as such, do not contain T. Thus, there is no position to which the predicate can front, so it remains *in situ*. In addition to lacking T⁰, I propose that numeral clauses lack a *v*P shell; hence the lack of case positions. As described in Chapter 3 and in previous work (Macdonald 2005a,b; 2006), I adopt a version of Bowers' (2002) split-*v*P hypothesis for Tongan. According to this analysis, ergative case is checked by Trans⁰ against an argument in [Spec, TransP], and absolutive case is checked by Pred⁰ against an argument in [Spec, PredP]. Both of these arguments are initially merged in VP, where they receive their Θ -roles and move to [Spec, PredP] and [Spec, TransP] to check case. In the absence of PredP and TransP, the argument of a numeral remains within VP. Because it is not case licensed, it cannot be overt.

The lack of T⁰ and a *v*P shell are not the only deficiencies in modifying numeral clauses in Tongan; further deficiency is found within the domain of C⁰. Before I elaborate on this, let us recall my proposed structure for ordinary, non-deficient Tongan clauses (Chapter 3), emphasizing the elements in the C-domain. I assume Rizzi's (1997) expanded CP model in which the non-deficient C-domain consists minimally of ForceP and FiniteP, with optional TopicP and FocusP projections between these two. Force⁰ and Finite⁰ correspond to the positions of conjunctions and Tense-Aspect-Mood particles (TAMs), respectively. Clitic pronouns, when present, are enclitic on the TAM in Finite⁰. In numeral clauses, I propose that the C-domain lacks Finite⁰. Thus, 'e is merged in Force⁰, where it functions simply to link the numeral clause to the preceding context (the nominal expression) and conveys no information about Tense, aspect, or Mood. This accounts for the restriction of TAM to 'e,

¹⁵⁶As noted earlier, Sailor (2010) notes that some argument drop in Tongan may be accounted for by *v*P-ellipsis. Under such an analysis, arguments disappear with the *v*P containing them. V escapes the elided constituent during VP-fronting and thus remains intact. It is possible, then, that numeral modifiers in Tongan contain *v*Ps (or PredPs) which are obligatorily deleted after VP-fronting. I do not pursue such an analysis here, because, as will be shown below (section 4.3.4), the presence of the [ANIMATE] classifier *toko-* suggests that numeral clauses do contain an argument, PRO, which is obligatorily null and caseless.

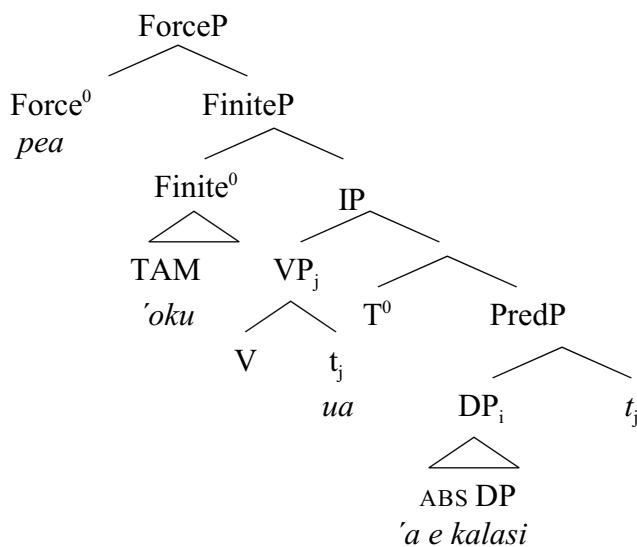
which, unlike other TAM particles, does not anchor the events of a clause to a particular time relative to the utterance, nor convey any aspectual information.¹⁵⁷

Figure 16, below, illustrates the deficient structure I propose for modifying numeral constructions in Tongan nominal expressions (Figure 16b) as contrasted with their more robust matrix counterparts (Figure 16a).

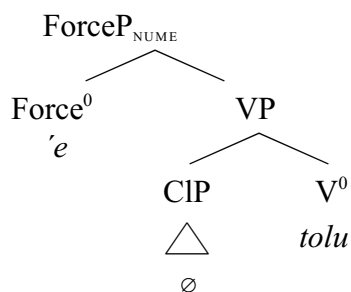
¹⁵⁷This analysis raises the question of how the same lexical item – the TAM, *'e* – can be merged into two different positions – Fin^0 or Force^0 – if Merge is feature-driven (Otsuka, p.c.). One possible solution is to propose that the deficient C-domain in numeral constructions in fact contains Fin^0 but not Force^0 – the inverse of what I propose. This has the advantage of allowing *'e* to be merged in the normal position for a TAM. Moreover, abolishing Fin^0 in this structure is not necessary to explain the unallowability of clitic pronouns, since this is accounted for by the lack of Case-checking positions in the numeral clause. However, this solution is problematic for two reasons: First, if the function of Force^0 is to link a clause to its (discursive or syntactic) context, it would seem that the projection of Force^0 is necessary in embedded clauses (Rizzi (1997:325) states that it is Force^0 which makes a clause “accessible to higher selection”). Second, if the function Fin^0 is “selecting a finite (or non-finite) IP” (Rizzi 1997:325), the fact that the complement of *'e* in a numeral clause is VP is compatible with the idea that Fin^0 is not projected in these constructions. This leaves us with the problem of how *'e* – which, being a TAM, is normally merged in Fin^0 – is merged in Force^0 here. I leave that question open for future exploration.

FIGURE 16: MATRIX AND NUMERAL CLAUSE STRUCTURES

- A. MATRIX CLAUSE
pea 'oku ua 'a e kalasi
 and PRES two ABS SPEC class
 'There are two classes' / 'The classes are two'



- B. NUMERAL CLAUSE
'e tolu
 SBJV three
 'three' (post-nominal modifier)



Note that in Figure 16b, the null argument is treated as a classifier phrase (CIP) and its internal structure is left unarticulated. In the following subsection, I introduce the numeral classifier *toko-* and its null counterpart, proposing that these introduce the null argument of the numeral clause, which is PRO.

4.3.4. The numeral classifiers *toko-* and \emptyset , and the nature of arguments within numeral clauses

The examples below show that the prefix¹⁵⁸ *toko-* is obligatorily present on numerals (172), the quantifying adjectives *lahi* ‘many’ and *si’i* ‘small’ (173) and the quantifying interrogative *fiha* ‘how many’ (174) when they function as matrix predicates with animate arguments or modify nominals whose referents are animate (Churchward 1953:175, FN:LMK). It is ungrammatical with inanimate nominals (175). Note that the animacy reflected by *toko-* is not the [HUMAN] feature of *kau*. *Toko-* is used not only with humans but also with living animals (Churchward 1953:175) (according to my consultant, LMK, this includes birds but excludes fish).

- (172) a. *'Oku ou fiefia 'i he *(toko)tolu 'a 'eku*
 PRES 1ex.sg happy DAT SPEC ***(toko)**-three ABS SPEC+GEN_{SBJ}.1EX.SG
fānau
 children
 ‘I am happy that I have three children’
 (*lit.* ‘...in the being-three of my children’)

¹⁵⁸Churchward (1953:175) states that he prefers to write *toko-* as a prefix before *si’i* or *lahi* and as a separate word before numerals, on the grounds that reduplication is allowed in the former case but not in the latter, as shown in (i). However, it strikes me as plausible (and likely), given the inherent differences in meaning between numerals (which are precise) and quantifiers (which are imprecise), that the difference in acceptability between examples such as (ia) and (ib) falls out from the fact that the type of modification achieved by reduplicating *toko-* in a quantifier would be infelicitous with a numeral. In the absence of evidence to the contrary, I assume that *toko-* is of the same morphological type both when it occurs with quantifying adjectives and when it occurs with numerals. Given its ability to be reduplicated in the former case (with the effect of modifying the meaning of *lahi* or *si’i*, not that of *toko*), I follow Pawley (1967) in treating it as a prefix.

- (i) a. *lahi; tokolahi; tokotokolahi*
 BIG *toko*-BIG *toko-toko*-BIG
 ‘numerous; numerous (animate); fairly numerous (animate)’
 b. *tolu; toko tolu; *toko toko tolu*
 three *toko* three *toko toko* three
 ‘three; three (animate)’

(adapted from Churchward 1953:175)

- b. *Na'a ku 'uma ki he tangata 'e *(toko)nima*
 PAST 1ex.sg kiss DAT SPEC man SBJV *(toko)-five
 'I kissed five men.'
 (FN:LMK 2012)
- (173) *kau hiva tokolahi*
 ASP sing *toko*-large
 'a large choir' (= choir of many singers)
 (FN:LMK 2012)
- (174) *'Oku toko fiha ho'o kau akó?*
 PRES *toko* how-many SPEC+GEN_{SBJ} +2.SG ASP learn
 'How many pupils do you have?'
 (adapted from Churchward 1953:175)
- (175) a. *'Oku ou fiefia 'i he mau'u ha kofu 'e (*toko)tolu*
 PRES 1ex.sg happy DAT SPEC have NONSPEC dress SBJV (*toko)-three
 'I am happy that I have three dresses'
- b. *Na'a ku langa 'a e fale 'e (*toko)nima*
 PAST 1EX.SG build ABS SPEC house SBJV five
 'I built five houses.'
 (FN:LMK 2012)

Toko- is prevalent throughout Polynesian, and its meaning is consistent across the language family. Pawley (1967) notes that *toko-* or its cognate *toka-* are documented in at least 15 modern Polynesian languages, always with the designation "human number prefix," and he reconstructs it to proto-Polynesian **toko-*.

In her study of classifier-like elements in Niuean, Massam (2009:692-693) notes that *toko-* appears "on numerals and quantifiers that quantify over human nouns." She treats it as a "real" or canonical classifier, contrasting it with the linker-like particles *e* and *a*, which she analyzes as non-classifying individuators, and the classifying collective particles (similar to

the nominal aspect markers of Tongan, described earlier in this chapter). She notes that *toko* fits the traditional features of a subset of classifiers, in appearing only in numeral or quantifier expressions, realized as a prefix on the numeral or quantifier, rather than as a particle occurring between a numeral and a noun” (Massam 2009:692). Although she sets aside a thorough exploration of this type of classifier, she notes that *toko*’s position is indicative that it is not part of the left periphery of the nominal phrase but, rather, that it is “merged in the same category as numerals.”

Tongan *toko*-, being strictly associated with quantificational contexts and a particular semantic class of entities (animates), is immediately suggestive of a numeral classifier, although on further examination, differences emerge. Since it does not express a measure or quantity, it specifically resembles what are often called sortal numeral classifiers (Lyons 1977, Grinevald 2000, Aikhenvald 2000) or count-classifiers (Cheng & Sybesma 1999). However, it does not seem, within the context of DP, to have the same individuating function as the numeral classifiers they describe.

Many authors note that classifiers, even when associated with nouns that denote countable entities, have an individuating function. Lyons (1977:463) states that a sortal numeral classifier “individuates whatever it refers to in terms of the kind of entity that it is.” They “presuppose [...] a principle for individuating entities and grouping them into kinds.” Cheng and Sybesma (1999) point out differences in the syntax between count-classifiers, which classify count nouns, and mass-classifiers, which quantify mass nouns and create groups of count nouns. Whereas mass-classifiers create units, count-classifiers “merely name the units in which certain phenomena naturally present themselves” (1999:515). This naming of units is important not from a semantic point of view, they argue, but from a syntactic one: count nouns in a classifier language lack a syntactic reflex of their semantic countability, and numerals require such a reflex. Cheng and Sybesma (1999) further note that number, an indicator that a noun is syntactically countable, is absent in Chinese languages.

In fact, it has been argued that number marking and classifiers are in complementary distribution cross-linguistically. Borer (2005) infers from this that plural markers such as English *-s* and classifiers are both realizations of the same syntactic projection, <DIV>. *Toko-*, however, does not appear to have such an individuating function with regards to the head noun, and, if it is indeed a classifier, it seems to provide a counter-example to the claim that number markers and classifiers are in complementary distribution. In Tongan, nouns can be individuated or grouped by nominal aspect markers, and numerals preceded by *toko-* regularly occur with the plural marker *ngaahi* as well as the nominal aspect markers. This, however, is not sufficient to rule out *toko-* as a classifier; Aikhenvald (2000) notes a number of other apparent counterexamples to the generalization, including South Dravidian, Algonquian, and South American languages.

The association of classifiers with individuation often has effects on how nouns interact with determiners and demonstratives, although the nature of these effects seems to vary from language to language, and thus is described rather differently by various authors. Lyons (1977:464) claims that in most languages, sortal classifiers are nouns, and, like generic nouns in English (*person, animal, bird, fish, or tree*), they may be combined with a definite article or demonstrative to form definite descriptions, allowing the noun itself to be elided. Allan (1977:286) makes a similar but stronger claim, stating that “in all numeral classifier languages, the classifiers occur in anaphoric or deictic expressions as well as in expressions of quantity.” Here, again, Tongan seems not to fit the mold, as such uses of *toko-* are not, to the best of my knowledge, available in the language. Grinevald (2000:63) also notes this tendency of classifiers to occur with demonstratives, but she takes a softer stance than Allan (1977), simply saying that classifiers “may occur on demonstratives” as well as on expressions of quantity.

Cheng and Sybesma (1999) note a different effect of individuation by classifiers. They argue that this function of classifiers in Chinese allows classifier-noun sequences to serve arguments in the absence of a determiner, because the classifiers themselves fulfill an essential role of D⁰: They select an individual entity from a class of entities, type-shifting a

predicate into an argument. Again, this does not seem to hold in Tongan. *Toko-* never precedes a noun; it is always adjacent to a numeral or a quantifying adjective, which appears with a noun. In order for that noun to function syntactically as an argument, it must be contained within a DP.

This characteristic of obligatory adjacency to a numeral or quantifying adjective brings us back to what makes *toko-* classifier-like. Grinevald (2000:63) states that numeral classifiers are so-called “because they occur in the context of quantification, either as free or bound morphemes.” Aikhenvald (2000) notes that the normal place for a classifier is adjacent to the numeral or quantifier, either as an independent lexeme or as an affix or clitic. Some, she notes, may be attached to or fused with the head noun, but this, she notes, is “extremely rare” (2000:101).¹⁵⁹

Toko- thus resembles a sortal classifier in that it occurs adjacent to numerals or quantifying adjectives and it classifies nouns according to a semantic quality (animacy). But it does not seem to serve the individuating or type-shifting functions seen in the classifiers of other languages. This can be resolved, however, if we consider two things: First, numerals in Tongan, as discussed above, are predicates, yet in numeral clauses, they seem to lack arguments. Second, despite their apparent adjacency to the numeral or quantifier, Cheng and Sybesma (1999) have argued that classifiers do not, in fact, form a constituent with these but, rather, with the nouns they individuate. Thus, it is conceivable that *toko-*, in a numeral clause, forms a constituent not with the numeral that follows it but, rather, with a null argument of that numeral. Although *toko-* is the only overt numeral classifier in Tongan, I assume that numeral phrases modifying inanimate nominals have a similar structure to those modifying animate nominals. In these cases, I propose that there is a null classifier, \emptyset , which likewise occupies Cl^0 .

¹⁵⁹That is, she states that it is “extremely rare” for a *numeral* classifier to be attached to the head noun. She describes separately another kind of classification, known as noun classification, in which a general noun functions as a classifier attached to a noun with a more specific denotation. This type of classification is independent of quantification.

One consequence of this model is that while *toko-* does not have individuating or type-shifting effects on the head nominal within which the numeral clause is embedded, it may have such an effect on the null argument to which it is affixed. Perhaps, just as D^0 is necessary to type-shift a nominal predicate into an argument elsewhere, Cl^0 is necessary to type-shift this null pronominal into an argument within a numeral clause.

This leads to the question of the identity of the null argument in Figure 16b. Given its status as an empty category with a (somewhat) local antecedent, the most likely candidates for its identity are PRO, *pro*, or an NP trace. The environment is not a canonical one for either raising or control, and *pro*-drop is common in Tongan, so *pro* seems a natural choice. However, *pro* in Tongan normally alternates with an overt pronoun. As discussed earlier, numeral clauses never contain overt pronouns, even deficient ones, and on this basis, I have argued that the numeral clause lacks case-checking positions altogether. Since *pro* is normally thought to check case, it is not a good match for this structure. Raising is also problematic, since there does not seem to be a trigger (neither EPP nor an unfilled case position) to the dominating DP. Furthermore, the numeral predicate discharges a Θ -role to its argument, which would result in a violation of the theta criterion when the dominating DP itself is merged as the argument of another predicate.

Having eliminated *pro* and *t*, we are left with PRO,¹⁶⁰ controlled by the head nominal (or, as I will argue, a higher projection thereof).¹⁶¹ This is consistent with the analysis of numeral clauses as infinitival, non case-checking clauses with Θ -assigning predicates. PRO, obligatorily null and caseless, can never be realized at PF, although the proclitic classifier *toko-* is. Thus, *toko-* leans on the numeral predicate and forms a phonological constituent with it. The fact that PRO requires a c-commanding controller in a higher projection provides a motivation for the roll-up of [Comp, V⁰] to [Spec, VP] in this construction (and perhaps others): Assuming the Phase Impenetrability Condition and CP as a phase, this movement needs to occur in order for PRO to be visible to operations from above.

Having established the existence of this null argument and that it is most likely PRO, we need to identify its controller. In the next section (4.4), I will present evidence that numeral clauses are right-adjoined to AspP. As we have seen, AspP dominates NP. While it might be plausible that the controller of PRO would be NP (or even N⁰), this would not allow PRO to

¹⁶⁰I am assuming a classic definition of PRO, whereby it is assumed to be Caseless. More recent treatments of PRO ascribe to it a special null case or allow it to bear ordinary structural Case. Others argue against the existence of PRO altogether, proposing that control is simply a special instance of movement. I set aside these analyses here, as they are problematic for my proposal. In the structure I propose for numeral clauses, the null argument is Caseless but theta-marked and has a co-referential, C-commanding antecedent, all qualities consistent with older versions of PRO and control. However, Otsuka (p.c.) notes another problem for my analysis: If the referent of PRO is not specified until Merge of its antecedent, how is its animacy determined in time to select the correct classifier (*toko-* or \emptyset)? One possibility is that the classifier is inserted at spellout. Another is that both derivations (with *toko-* and \emptyset) are generated, but the incorrect derivation crashes. I am not assuming that the control relation between PRO and its antecedent here is based on ϕ -feature agreement but, rather, on ontological identity, and, likewise, that the animacy which licenses the correct classifier is not a syntactic feature but, rather, an ontological quality.

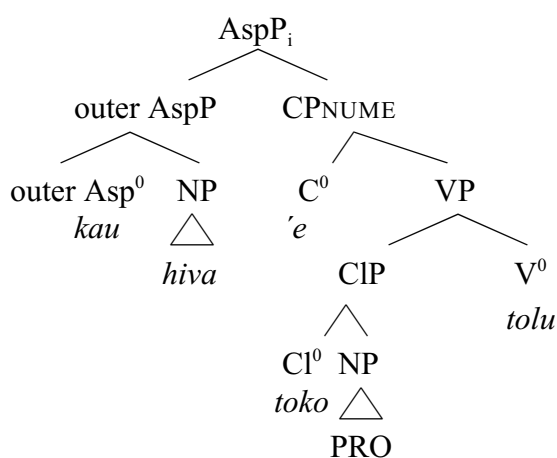
¹⁶¹Another possibility which I have not entertained here is that it is a null SE-Anaphor. Otsuka (2011) argues for the existence of SE-anaphors in Tongan, serving as the null arguments of ϕ -infinitives. These obligatorily null anaphors, like *pro*, check case and can alternate with overt pronouns; thus, like *pro*, they are not a good candidate for the null argument in numeral clauses.

be c-commanded by its controller. Instead, I propose that it is AspP which controls PRO.¹⁶²

Figure 17 expands on Figure 16b with the inclusion of PRO and its controller.

FIGURE 17: NUMERAL CLAUSE ADJOINED TO OUTER ASPP

kau hiva 'e tokotolu
 ASP man SBJV CL+three
 ‘three choirs’



4.4. External Syntax of Modifying Numerals

As proposed above, numeral clauses in Tongan nominal expressions are modifiers not of NP but of outer AspP, to which they are right-adjoined. As AspP dominates NP, this results in a configuration whereby NP appears in an intermediate position between the nominal aspect marker(s) and the numeral clause. Despite the linear distance, the relation that holds between

¹⁶²I acknowledge that this is inconsistent with some definitions of c-command (e.g. Kayne (1994), who argues that a segment (such as the lower AspP in Figure 17) cannot enter into a c-command relation), and that a c-command . However, AspP is more local to PRO than either NP or N⁰. Control into an adjunct (or control without c-command, if the controller is taken to be a lower constituent within AspP) is suggestive of non-obligatory control (NOC) (Landau 2000, Holmberg 2005, Sichel 2010). However, NOC seems to apply only in contexts where there are two (or more) potential antecedents for PRO, only one of which c-commands it, and thus is not relevant to the situation under discussion here.

them is underlyingly local. Evidence for this can be found in a series of special numeral constructions (SNCs), in which nominal aspect markers with particular numeric values co-occur with numerals, yielding a total count equal to the product of the two elements. Thus, an apparent long-distance relation is shown to be underlyingly local.

4.4.1. Numeral clauses, relative clauses, and demonstratives

In this section, I examine the positions of relative clauses and numerals (and, to a lesser degree, adjectives) within nominal expressions. As briefly noted in section 4.3.3, above, constituent order within nominal expressions provides some evidence in support of the notion that numeral clauses differ from relative clauses. Preliminary data from my own fieldwork and from Ahn (2012)¹⁶³ seem to suggest that both heavy relative clauses (HRCs) – that is, relative clauses containing overt arguments – and numeral clauses, which always lack overt arguments, may follow the definite accent and that their positions in this case may be interchangeable. I propose that both are modifiers of $\text{Dem}_{\text{ANA}}^0$; assuming right-adjunction, this places them high and in the right periphery of nominal expressions. On the other hand, while light relative clauses (LRCs) – that is relative clauses containing no overt arguments – and numeral clauses may both precede Dem^0 , their positions here are not interchangeable: The position of numeral clauses seems to be to the right of other post-nominal, pre-demonstrative modifiers, including adjectives and LRCs. I propose that this is because numeral clauses below $\text{Dem}_{\text{ANA}}^0$ are modifiers of outer AspP, whereas adjectives and light relative clauses are modifiers of NP. Again, assuming right adjunction, this places numeral clauses higher and further to the right than adjectives and light relative clauses. In the following sections, 4.4.2

¹⁶³Finding data that illustrates the relative positions of all of these elements is difficult. Rich nominal expressions containing a full complement of modifiers are uncommon in speech and difficult to elicit. My consultant, LMK, often rejects them or seems to accept them but then repeats them back with one or more modifiers removed. Often, she suggests dividing such nominal expressions into multiple phrases or splitting them across clauses. As a result, much of the data presented here contains only two or three elements in addition to the head nominal, and some inference is required to piece them together. What I present here is a preliminary analysis based on this; further research is needed to support or falsify this hypothesis.

and 4.4.3, I show how special numeral constructions provide further evidence that numeral clauses are modifiers of outer AspP.

Ahn (2012), who does not discuss numerals, notes the different positions in which adjectives and relative clauses can appear within Tongan nominal expressions; his data indicate that adjectives must precede spatial demonstrative clitics (176), whereas (unreduced) relative clauses obligatorily follow them (177).¹⁶⁴

(176) a. *'Oku lele 'a e kumaa 'i he fale (fo'ou)-ni.*
 PRES run ABS SPEC mouse DAT SPEC house **new-DEM.1**
 'The mouse is running in this (new) house.'

b. **'Oku lele 'a e kumaa 'i he fale-ni fo'ou*
 PRES run ABS SPEC mouse DAT SPEC **house-DEM.1 new**

(Ahn 2012:2)

(177) a. *'Oku ma'a 'a e soté-na na'a ku foo*
 PRES clean ABS SPEC shirt-DEM.2 PAST 1EX.SG wash

b. **'Oku ma'a 'a e sote na'a ku foó-na*
 PRES clean ABS SPEC shirt PAST 1EX.SG **wash-DEM.2**

(Ahn 2012:6)

In a footnote, however, Ahn (2012) acknowledges that what he calls reduced relative clauses can precede demonstrative clitics. Given that Tongan is a V-initial language, lacks *wh*-movement (Potsdam 2009), and does not have relative pronouns, it is difficult to distinguish reduced from unreduced relative clauses. Recall that the relative clause in (170), repeated here as (178) has the TAM *kuo* (PERFECTIVE) and thus appears to be finite. While it lacks

¹⁶⁴Ahn (2012) argues that pre-nominal determiners, the definite accent, and demonstrative clitics realize three separate projections – high D⁰, low D⁰, and Dem⁰, respectively. He supports this claim by presenting examples where relative clauses seem to appear between a demonstrative clitic (on the left) and the definite accent (on the right). At the time of writing, I have not had the opportunity to test this result with my own consultant, who is generally reluctant to accept demonstrative clitics in utterances that lack appropriate real-world deixis.

any overt pronouns, this is to be expected whether or not the clause is reduced, as the verb *'osi* 'finish' is a one-place predicate, and its sole argument – the relativized element – would be a third-person singular, absolutive S and thus mandatorily realized by a gap (Chung 1978; Otsuka 2000, 2002).

- (178) *he ta'u kuo 'osi-na*
 SPEC year PERF finish-DEM.2
 'the year (which is) just finished'
 (*lit.* 'the year having just finished')

(Ahn 2012:7*n*)

My own data seems to differ from that of Ahn (2012) in ways that suggest the factors determining the position of relative clauses within nominal expressions are more complicated than this. Specifically, my consultant sometimes prefers the relative clause to appear immediately to the right of N, preceding other elements;¹⁶⁵ in other contexts, she prefers it to appear at the right edge of a nominal expression, following other elements; and in yet others, the position of the relative clause seems to be freely variable.

Free variation seems to apply to the linear ordering of numerals and relative clauses in the absence of other modifiers, the definite accent, or a demonstrative clitic. The two sentences below were judged equally grammatical, and my consultant claimed that there was no difference of emphasis or context (179).

¹⁶⁵ Again, it is difficult to get judgements from my consultant on word orders with demonstrative clitics, as she tends to disprefer these in "out-of-the-blue" contexts. Ahn's (2012) analysis allows elements to precede the DA and still follow Dem⁰. Even within his analysis, however, any element which precedes an adjective within a nominal expression must, by implication, precede Dem⁰. In his analysis, adjectives are modifiers merged within NP, and they move with NP from its low merge position (Comp, low-D⁰) to a higher one (Spec, DemP). In the absence of a demonstrative, NP must still move leftwards, perhaps to [Spec, low-DP] in order to surface to the left of the definite accent.

(179) a. *Ko e kau fefine 'e toko tolu te nau lea 'i he fakataha 'apongipongi.*
 PRED SPEC ASP woman SBJV CLS **three** SBJV 3.PL speak DAT SPEC meeting
 tomorrow.

'These are the three women who will speak at the meeting tomorrow.'

b. *Ko e kau fefine te nau lea 'i he fakataha 'apongipongi*
 PRED SPEC ASP woman SBJV 3.PL speak DAT SPEC meeting tomorrow
 'e **toko tolu.**

SBJV CLS **three**

'These are the three women who will speak at the meeting tomorrow.'

(FN:LMK 2012)

However, in the sentence below (180), my consultant indicated that the numeral and the definite accent must both precede the relative clause.

(180) a. *Na'a ku fanongo ki he ngaahi kulupu hiva 'e nimá*
 PAST 1EX.SG listen DAT SPEC PL group sing SBJV **five-DA**
te nau hiva 'i he fe'auhi.
 SBJV 3.PL sing DAT SPEC competition

'I listened to the five choirs who will sing in the competition.'

b. **Na'a ku fanongo ki he ngaahi kulupu hiva te nau hiva 'i he*
 PAST 1EX.SG listen DAT SPEC PL group sing SBJV 3.PL sing DAT SPEC
fe'auhi 'e nimá.
 competition SBJV **five-DA**

c. **Na'a ku fanongo ki he ngaahi kulupu hiva te nau hiva 'i he*
 PAST 1EX.SG listen DAT SPEC PL group sing SBJV 3.PL DAT SPEC
fe'auhi 'e nima.
 competition-DA SBJV **five**

(FN:LMK 2013)

Note that the phrase translated here as ‘choirs’ is not *kau hiva* but *kulupu hiva*.¹⁶⁶ It seems likely to me that these two phrases have different syntactic structures. Specifically, as will be discussed in Section 4.4.3, *kau hiva* and *kau fefine* are outer AspPs, whereas *kulupu hiva* is a compound noun. Where the numeral modifies an AspP, as in (179), its position can alternate with that of a relative clause, but where it modifies an NP, the numeral must precede.

While this difference in syntactic structure may explain why the position of the relative clause can alternate with that of the numeral in (179) but not (180), it does not explain why the definite accent muse precede the relative clause in (180). This would appear to be at odds with Chapter 2, wherein it was observed that the normal position of the DA is after relative clauses, and from this it was argued that the DA occupies a high position, $\text{Dem}_{\text{ANA}}^0$, above DP. This rightward position of the DA is seen again in (181), below.

- (181) *'Oku ma'a 'a e sote(-na) na'a ku foó.*
 PRES clean ABS SPEC shirt(-DEM_{sp}.2) PAST 1EX.SG wash-DA
 ‘The/that shirt I washed is clean.’

(Ahn 2012:6)

It would seem that while relative clauses are normally internal to $\text{Dem}_{\text{ANA}}\text{P}$, they may also appear external to them, due either to having an alternate, higher merge position (as modifiers of $\text{Dem}_{\text{ANA}}\text{P}$ rather than of DP or something smaller) or to right-dislocation. An analysis of Tongan relative clauses falls beyond the scope of this dissertation, but data such as (180) seem to suggest that the presence of a numeral within $\text{Dem}_{\text{ANA}}\text{P}$ causes relative clauses to appear outside of $\text{Dem}_{\text{ANA}}\text{P}$, perhaps due to competition for the same position.

¹⁶⁶Interestingly, while my consultant, LMK, readily accepts *ngaai kau hiva* ‘choirs,’ in which the pluralizing/animate aspect marker *kau* is combined with the plural number marker *ngaahi* to indicate a plurality of non-singulative sets, she disfavours phrases such as **^hngaahi kau hiva 'e nima* ‘five choirs.’ It would seem that the groups denoted by the non-singulative marker *kau* are count nominals in the sense that they can be pluralized, but they are not precise enough to be numerated. This is at least superficially similar to Cantonese *di*, which can be used to indicate a non-singulative set but cannot be combined with numerals (see Cowper and Hall 2012b:38, who note that *di* indicates “a very non-specific unit of individuation [...] that is not concrete enough to permit enumeration.”) Similarly, Churchward (1953:32) notes that “numerals are never used after nouns preceded by [the pluralizing Aspect markers] *tukui*, *hala*, or *tu'u*.”

Example (182) below contains a relative clause that is hard to categorize as heavy or light, reduced or unreduced. It contains an overt pronominal argument, but the relativized element is a gap. Still, it obligatorily appears close to N⁰, preceding not only the numeral but also the post-nominal adjective *engeenga* ‘yellow.’

- (182) a. *ha mata'i ika na'a ku ma'u engeenga 'e tolu*
 NONSPEC ASP fish PAST 1EX.SG catch yellow SBJV three
 ‘three yellow fish that I caught’
- b. **ha mata'i ika na'a ku ma'u 'e tolu engeenga*
 NONSPEC ASP fish PAST 1EX.SG catch SBJV three yellow
- c. **ha mata'i ika engeenga na'a ku ma'u 'e tolu*
 NONSPEC ASP fish yellow PAST 1EX.SG catch SBJV three
- d. **ha mata'i ika engeenga 'e tolu na'a ku ma'u*
 NONSPEC ASP fish yellow SBJV three PAST 1EX.SG catch
- e. **ha mata'i ika 'e tolu na'a ku ma'u engeenga*
 NONSPEC ASP fish SBJV three PAST 1EX.SG catch yellow
- f. **ha mata'i ika 'e tolu engeenga na'a ku ma'u*
 NONSPEC ASP fish SBJV three yellow PAST 1EX.SG catch
- (FN:LMK 2013)

What the foregoing discussion shows us is that, in terms of their position relative to Dem⁰, numeral clauses seem to behave differently from relative clauses. In many cases, particularly where the relative clause is heavy (in the sense that it contains at least one overt argument), the presence of a modifying numeral causes the relative clause to appear outside of Dem_{ANA}P. In other cases, particularly – but not exclusively – when the relative clause is light (in the sense that it contains no overt argument), the relative clause seems to occupy an NP-internal position closer to the head nominal than that of the numeral clause. In some cases, the ordering of relative and numeral clauses seems to be variable, suggesting that one or both of them may be able to occupy multiple structural positions.

Two more examples from my consultant further confuse this picture. The first of these is (107), repeated here as (183). It contains neither a relative clause nor a definite accent, but it does contain the numeral, an adjective, and a possessive modifier (possessor). Here, the position of the numeral relative to these other element appears to be freely variable: It may directly follow the noun, the adjective, or the possessor. The second (184) is a similar example with a definite accent. Here, the presence of the definite accent does seem to restrict the ordering options somewhat; what is surprising is that the numeral can, in this case, either directly follow the noun or can follow all of the other post-nominal modifiers, including the DA. Here, LMK expressed certainty that the definite accent had to be attached to *Sione* ‘John’ and not the numeral or the adjective.

- (183) a. *he tama'iki 'e tokotolu faka'ofa'ofa 'o Sione*
 SPEC boy SBJV CLS-**three** beautiful GEN_{OBJ} John
 ‘John’s three beautiful boys’
- b. *he tama'iki faka'ofa'ofa 'e tokotolu 'o Sione*
 SPEC boy beautiful SBJV CLS-**three** GEN_{OBJ} John
 ‘John’s three beautiful boys’
- c. *he tama'iki faka'ofa'ofa 'o Sione 'e tokotolu*
 SPEC boy beautiful GEN_{OBJ} John SBJV CLS-**three**
 ‘John’s three beautiful boys’

(FN:LMK 2009)

- (184) a. *'Oku sio ki he ngaahi fanga ki'i foha 'e tokotolu faka'ofa'ofa*
 PRES see DAT SPEC PL ASP small son SBJV CLS-**three** beautiful
'o Sioné
 GEN_{OBJ} John-DA
 ‘I saw John’s three beautiful little boys.’

- b. *'Oku sio ki he ngaahi fanga ki'i foha faka'ofa'ofa 'o Sioné*
 PRES see DAT SPEC PL ASP small son beautiful GEN_{OBJ} John- DA
'e toko tolu.
 SBJV CLS **three**
 'I saw John's three beautiful little boys.'

(FN:LMK 2013)

This data is incomplete, but it can be pieced together to produce some preliminary generalizations. Among the post-nominal modifiers, adjectives and possessors must precede the definite accent; thus, they are obligatorily merged within $\text{Dem}_{\text{ANA}}\text{P}$ and must remain within it. Recall from Chapter 3 that possessors occupied a position at the right edge of DP, due to the movement of #P into [Spec, PossP]. Adjectives likely occupy a position internal or adjacent to NP. Numerals and relative clauses, on the other hand, may either precede or follow the definite accent and thus may occupy positions either within or outside of $\text{Dem}_{\text{ANA}}\text{P}$. This variation is not entirely free, but the conditions regulating it are complex and may involve an interplay of prosody, pragmatics, and syntax. Some relative clauses obligatorily appear adjacent to N^0 , suggesting that they are NP-internal, and some obligatorily follow the definite accent, suggesting that they are external to $\text{Dem}_{\text{ANA}}\text{P}$. Numerals most often precede, but sometimes follow, the definite accent suggesting that they, likewise, can fall within or outside of $\text{Dem}_{\text{ANA}}\text{P}$. When they are internal to it, they follow N^0 - or NP-adjacent modifiers such as adjectives and certain relative clauses but precede possessors, suggesting that they are modifiers of a constituent no larger than #P and no smaller than NP. Evidence from special numeral constructions, examined in the following section suggests that in this position they are adjuncts of outer AspP. When modifying numerals (and relative clauses) follow the definite accent, I propose – tentatively – that they are adjuncts to $\text{Dem}_{\text{ANA}}\text{P}$.

I will not dwell at length on the $\text{Dem}_{\text{ANAM}}\text{P}$ -external position of modifying numerals. The internal position, as adjuncts to outer AspP, is more relevant to this dissertation. Like other syntactic relations I have examined, it yields an apparent long-distance interaction, due to the potential robustness of outer AspP. It also yields interesting semantic effects, as the numeral does not modify the referent(s) of the noun directly, but the sets which contain them. As

noted above, evidence for this comes from a series of so-called “special numeral constructions.” In these constructions, outer aspect markers with specific numerical values interact with the numeral to create a new numerical value. A survey of special numeral constructions follows in section 4.4.2, following which I present, in section 4.4.3, a phrase structure diagram illustrating my proposal for the positions of numeral clauses within Tongan nominal expressions.

4.4.2. Special numeral constructions

Special numeral constructions (SNCs), found in numerous Polynesian languages (Bender & Beller 2007), are used for counting traditional items such as fish, coconuts, yams, and bunches of roof-thatch. Although they are primarily reserved for ceremonial use (Churchward 1953, FN:LMK), they are still productive in other contexts with certain items. For example, the special numeral construction for fish would still be used when placing an order at the market (FN:LMK). As will be shown below, these special constructions have the same basic structure as the ordinary ones – *i.e.* the numeral is in a clause headed by *'e*, following the head nominal – but they also employ specialized lexical items in Asp⁰ as well as within the numeral clause itself, and these interact in interesting ways. In some cases, the aspect markers have numerical values which are multiplied by that of the numeral to create the total quantity of things being counted. In others, the aspect marker seems to be incorporated into the numeral.

In order to see what’s special about special numeral constructions, it is helpful to take a quick look at the ordinary numerals. These, as it turns out, are transparently regular, following a decimal system (Table 16). Simple numerals exist for integers from one to ten, and powers of ten are indicated by a suffix or free morpheme following the integer (lower powers – ten and

100 – are suffixes; higher powers are free morphemes).¹⁶⁷ Complex numerals are created by creating a sequence of these numerals, with the special conjunction *mā* preceding the final one, as shown in (185).¹⁶⁸

- (185) a. *nimangeau hongofulu mā ua*
 five-10² ten *mā* two
 ‘512’
 (*lit.* five hundred, ten, and two)
- b. *taha kilu taha mano tolu afe fitungeau valungofulu mā ua*
 one 10⁵ one 10⁴ three 10³ seven-10² eight-10¹ *mā* two
 ‘113, 782’
 (*lit.* ‘one hundred-thousand, one ten-thousand, three thousand, eighty and two’)

(adapted from Churchward 1953:171)

¹⁶⁷Lest one assume that this decimal system is a product of European contact, particularly given the borrowed form *milionā* ‘million’ for 10⁶, Bender and Beller (2007:821) point out that the decimal system in Polynesian languages was inherited from proto-Polynesian, with various languages having basic terms for powers of ten with upper limits ranging from 10³ (1000) to 10¹⁰ (10,000,000,000).

¹⁶⁸This conjunction is used only in numerals (Churchward 1959:309). Churchward(1953:172) notes that it is sometimes omitted when the final constituent of the numeral is a multiple of ten, and that speakers sometimes omit the powers of ten and simply name the digits, such that the numeral in (184) could be expressed as *taha taha tolu fitu valu ua* (*lit.* ‘one one three, seven eight two’).

TABLE 16: TONGAN NUMERALS

	$n * 10^0$	$n * 10^1$	$n * 10^2$	$n * 10^3$	$n * 10^4$	$n * 10^5$	$n * 10^6$
1	<i>taha</i>	<i>hongofulu</i>	<i>teau</i>	<i>taha afe</i>	<i>taha mano</i>	<i>taha kilu</i>	<i>taha miliona</i>
2	<i>ua</i>	<i>uofulu</i>	<i>uangeau</i>	<i>ua afe</i>	<i>ua mano</i>	<i>ua kilu</i>	<i>ua miliona</i>
3	<i>tolu</i>	<i>tolungofulu</i>	<i>tolungeau</i>	<i>tolu afe</i>	<i>tolu mano</i>	<i>tolu kilu</i>	<i>tolu miliona</i>
4	<i>fā</i>	<i>fāngofulu</i>	<i>fāngeau</i>	<i>fā afe</i>	<i>fā mano</i>	<i>fā kilu</i>	<i>fā miliona</i>
5	<i>nima</i>	<i>nimangofulu</i>	<i>nimangeau</i>	<i>nima afe</i>	<i>nima mano</i>	<i>nima kilu</i>	<i>nima miliona</i>
6	<i>ono</i>	<i>onongofulu</i>	<i>onongeau</i>	<i>ono afe</i>	<i>ono mano</i>	<i>ono kilu</i>	<i>ono miliona</i>
7	<i>fitu</i>	<i>fitungofulu</i>	<i>fitungeau</i>	<i>fitu afe</i>	<i>fitu mano</i>	<i>fitu kilu</i>	<i>fitu miliona</i>
8	<i>valu</i>	<i>valungofulu</i>	<i>valungeau</i>	<i>valu afe</i>	<i>valu mano</i>	<i>valu kilu</i>	<i>valu miliona</i>
9	<i>hiva</i>	<i>hivangofulu</i>	<i>hivangeau</i>	<i>hiva afe</i>	<i>hiva mano</i>	<i>hiva kilu</i>	<i>hiva miliona</i>

This regular, base ten counting system is supplemented in many Polynesian languages by special counting systems for a small class of objects. Bender and Beller (2007:825) note that the domain of these systems “consists of subsistence products that were both culturally significant and abundant, such as fish, coconuts, the most prestigious food starch, and material for fabrics or thatch.” Large amounts of these products were collected when collecting tributes or redistributing resources as in times of war. My consultant, LMK, notes that annual ceremonies are still held in Tonga during which tributes of such items are gathered and presented to the royal family, and that these special counting systems are still used in these ceremonies.

Churchward presents special counting paradigms for six different items: *'ufi* ‘yams,’ *ika* ‘fish,’ *pulopula* ‘pieces of seed-yam for planting,’ *niu* ‘coconuts,’ and *au* ‘pieces of sugar-cane thatch.’¹⁶⁹ For the sake of parsimony, I will present the first three of these here. While the patterns of the other two deviate slightly, all of the elements of those patterns are seen in the three counting systems I describe. The curious reader is referred to Churchward (1953:184-189) for the others.

In all of these paradigms, singleton items are preceded by an individuating nominal aspect marker. With *niu* ‘coconut,’ and *'ufi* ‘yam,’ the aspect marker *fo'i* ‘fruit-of’ is used (186). With *ika*, ‘fish,’ the aspect marker *mata'i* ‘eye-of’ is used (187). Both of these are productive individuating aspect markers, not limited to use in SNCs.

- (186) a. *ha* *fo'i* *niu* *'e* *taha*
 NONSPEC fruit-of coconut SBJV one
 ‘one coconut’
- b. *ha* *fo'i* *'ufi* *'e* *taha*
 NONSPEC fruit-of yam SBJV one
 ‘one yam’

(adapted from Churchward 1953:185, 186)

- (187) *ha* *mata'i* *ika* *'e* *taha*
 NONSPEC **eye-of** fish SBJV **one**
 ‘one fish’

(adapted from Churchward 1953:187)

So far, the SNCs look like ordinary numeral constructions. Things start to get more interesting, however, as numbers increase. Multiple items are counted in pairs (2-18), by score (20-180), by 200s (200-1800), and by 2000s. Smaller batches are adjoined rightward with *mo* ‘and’ (rather than *mā*) to create complex numerals (188a); note that the nominal is

¹⁶⁹My consultant LMK informs me that there is also a special counting system for *tapa*, a valuable handcrafted item made of woven bark and used as a blanket, a mat, or a wall hanging.

repeated with each batch. Odd numerals (greater than one) are indicated by adding *mo e matelau* ‘and the odd one’ to an even numeral (188b).

(188) a. *ha niu 'e tekau mo e taua'i niu 'e taha*
 NONSPEC coconut SBJV 20 and SPEC pair coconut SBJV one
 ‘22 coconuts’
 (*lit.* ‘20 coconuts and one pair of coconuts’)

b. *ha niu 'e uangakau mo e matelau*
 NONSPEC coconut SBJV 40 and SPEC odd-one
 ‘41 coconuts’
 (*lit.* ‘40 coconuts and an odd one’)

(adapted from Churchward 1953:185)

However, while the pattern of counting by ones, twos, 20s, 200s, and 2000s is consistent amongst these special nouns, the means to express pairs, 20s, etc. varies. In all cases, it involves what Bender and Beller (2007) call multiplying classifiers, which they define as lexemes that not only classify the units being counted in terms of their kind but also “indicate a precise value [...] that serves as a factor for the adjoined numeral” (2007:824). These supplant the power-of-ten morphemes seen after the integers in the ordinary, decimal numerals. Rather than multiply the integer by a power of ten, they multiply it by two, 20, or 200.

There are two sources of variation among the systems for counting different items: Different multipliers are used for different items, and those multipliers occur in different positions for different items. Sometimes, the multiplier forms part of the numeral itself, either as part of a portmanteau that combines the basic integer and the multiplier (much like the multiples of ten and 100 in Table 16) or following the basic integer as a separate word (as do the higher powers of ten in Table 16). Other times, the power classifier is pre-nominal, essentially serving as a nominal aspect marker. And at yet other times, two power classifiers are used, one within the numeral and one in the nominal aspect position. It is the second and third of

these three situations that sheds light on the relationship between nominal aspect and numeral clauses in Tongan.¹⁷⁰

The pre-nominal multipliers (which I consider nominal aspect markers) in Tongan are *taua 'i* ‘pair-of’ and *kau* ‘20’¹⁷¹. The independent post-numeral multiplier is *nga'ahoa* ‘pair.’ There are numerous portmanteau numerals which combine an ordinary numeral with a multiplier; these include series ending in *-kau* ‘20’ and *-fua* ‘200’ (for coconuts). As Bender and Beller (2007) note, these multipliers differ from those found in ordinary numeral constructions not only in their numerical value but also in having a classifying function, as each is limited to a particular subset of nouns. What will be seen in the data that follow is that the calculation of numeric value in the special numeral constructions depends on close relations amongst several syntactic entities – aspect, noun, numeral, and post-numeral multiplier. Of particular interest here is the necessity of a close relationship between Asp^0 to the left of the noun and the numeral clause to its right.

The first of two constructions for pairwise counting in Tongan SNCs, used with *niu* ‘coconut,’ is illustrated below in (189). It employs a special aspect marker, *taua 'i* ‘pair,’ in place of the individuating aspect marker *fo 'i* ‘fruit of.’ *Taua 'i*, as indicated by its gloss, is a multiplier; the combination of *taua 'i* before a noun and a numeral after it expresses a value which is twice that of the numeral alone. Note that both (189a) and (189b), the numeral is *taha* ‘one;’ the difference is that in (189a), the individuating aspect marker *fo 'i* ‘fruit-of’ is

¹⁷⁰Bender and Beller (2007) use the term *classifier* to denote both the pre-nominal particles I treat as nominal aspect markers and the post-numeral multipliers. They propose a typology of special counting systems in which some (*classifier* systems) employ simple classifiers that are specific to the item being counted but do not alter the numerical value and others (*multiplier* systems) employ generalized power classifiers that are not specific to particular nouns, and others (*mixed* systems). They classify the special counting systems of Samoan and Rennellese as mixed systems, which contain both classifying and multiplying classifiers. Tongan, which they call a *composite* system, they consider unique in having single items that both classify and multiply.

¹⁷¹This *kau* should not be confused with the [+HUMAN] aspect marker *kau*, discussed in sections 4.1.3 and 4.2.4. The *kau* seen in special numeral constructions is specific to counting yams and fish, and it always indicates a multiple of 20. The *kau* discussed in sections 4.1.3 and 4.2.4 is specific to human referents (and will mark otherwise underspecified referents as [+HUMAN] and it denotes a non-singular set of indeterminate size).

used, yielding a total value of one, and in (189b), the pairwise aspect marker *taua'i* is used, yielding a total value of two.

- (189) a. *ha fo'i niu 'e taha*
 NONSPEC fruit-of coconut SBJV one
 'one coconut'
- b. *ha taua'i niu 'e taha*
 NONSPEC pair-of coconut SBJV one
 'two coconuts'
 (*lit.* 'one pair of coconuts')

(adapted from Churchward 1953:185)

The other structure for pairwise counting is seen with *'ufi* 'yam' and *'ika* 'fish,' as shown in (190) and (191). Here, rather than a pairwise aspect marker, the construction employs a special post-numeral lexeme. Like *taua'i* 'pair-of,' *nga'ahoa* 'pair' multiplies the numeral by two. Note here that the usual individuating aspect markers *fo'i* 'fruit-of' and *mata'i* 'eye-of' are used.

- (190) a. *ha fo'i 'ufi 'e taha*
 NONSPEC **fruit-of** yam SBJV one
 'one yam'
- b. *ha fo'i 'ufi 'e taha nga'ahoa*
 NONSPEC **fruit-of** yam SBJV one **pair**
 'two yams'
 (*lit.* 'one pair, fruit of yam')

(adapted from Churchward 1953:186)

- (191) a. *ha mata'i ika 'e taha nga'ahoa*
 NONSPEC eye-of fish SBJV one pair
 'two fish'

- b. *ha mata'i ika 'e taha nga'ahoa*
 NONSPEC eye-of fish SBJV one pair
 'two fish'
 (*lit.* 'one pair, eye of fish')

(adapted from Churchward 1953:187)

There are likewise two methods of scorewise counting. With *'ufi* 'yam' and *ika* 'fish,' a special aspect marker, *kau* '20' is used (192, 193). This is not the same *kau* as the nominal aspect marker used with NPs denoting humans. Recall that the *kau* seen earlier can be used to disambiguate between human and non-human readings of an underspecified NP, suggesting that it has [HUMAN] as part of its meaning, and that while it does indicate plurality, it does not denote a specific number. The *kau* seen in special numeral constructions, on the other hand, does not add [HUMAN] to the meaning of an NP, and it specifically denotes a numeric value of 20.

- (192) *ha kau 'ufi 'e ua*
 NONSPEC **20** yam SBJV **two**
 '40 yams'
 (*lit.* two, 20 yams)

(adapted from Churchward 1953:186)

- (193) *ha kau ika 'e taha*
 NONSPEC **20** fish SBJV **one**
 '40 fish'
 (*lit.* two, 20 fish)

(adapted from Churchward 1953:187)

With *niu* 'coconuts,' scorewise counting involves the use of special numerals. These numerals are portmanteaux, semi-transparent in their composition, incorporating a post-numeral scorewise multiplier with an ordinary numeral. The special numerals used to count coconuts are composed of an ordinary numeral (or part of one – *te* for *taha*) and the

scorewise aspect marker *kau*, as exemplified in (194) with *tekau* ‘20’ and *uangakau* ‘40.’

With these numerals, no overt nominal aspect marker is used; the aspectual function seems to be executed by the incorporated scorewise particle.

- (194) a. *ha niu 'e tekau*
 NONSPEC coconut SBJV 1-*kau*
 ‘20 coconuts’
 (cf. *tefula* ‘20’)
- b. *ha niu 'e uangakau*
 NONSPEC coconut SBJV 2-*kau*
 ‘40 coconuts’

(adapted from Churchward 1953:185)

From 200 through 1800, the patterns diverge again. ‘*Ufi* “yam” and ‘*ika* “fish” continue as before, with the aspect marker *kau* “20” preceding the nominal and effectively multiplying the value of the numeral by 20 (195, 196). For *niu* “coconut,” there is a special series of numerals beginning, as with the scorewise numerals, with *te-* or a numeral from one through nine, but followed with a different incorporated particle, *fua*, whose value seems to be 200 (197).¹⁷²

- (195) *ha kau 'ufi 'e hongofulu*
 NONSPEC **20** yam SBJV **10**
 ‘200 yams’
 (*lit.* ten, 20 yams)

(adapted from Churchward 1953:186)

¹⁷²Churchward (1959:198) lists 14 separate entries for *fua* with a wide range of meanings. In my opinion, the one most likely corresponding to the *fua* which means ‘200’ is a flexible root meaning either ‘to weigh or measure’ or ‘weight or measurement.’

- (196) *ha kau ika 'e hongofulu*
 NONSPEC **score** fish SBJV **ten**
 '200 fish'
 (*lit.* ten, 20 fish)

(adapted from Churchward 1953:187)

- (197) *ha niu 'e tefua*
 NONSPEC coconut SBJV **200**
 '200 coconuts'

(adapted from Churchward 1953:185)

Finally, when counting by 2000s, the pattern changes again, but only for *niu* “coconut.” ‘*Ufi* “yam” and ‘*ika* “fish” are still counted by 20s, with the nominal aspect particle *kau* preceding and multiplying the numeral by 20. With *niu*, however, something puzzling happens: Normal, post-nominal numerals are used, and no overt aspect marker is present. However, the total value expressed is 20 times that of the numeral. This seems to suggest the presence of a null multiplier with a value of “20.” This is illustrated in (197).¹⁷³ Given the lack of an overt nominal aspect marker, I propose that the null multiplier is, in fact, a null nominal aspect marker.

- (198) a. *ha niu 'e teau*
 NONSPEC coconut SBJV **100**
 '2000 coconuts'
- b. *ha niu 'e uangeau*
 NONSPEC coconut SBJV **200**
 '4000 coconuts'

(adapted from Churchward 1953:185)

The patterns described above and exemplified in (186-198) are presented in Table 17.

¹⁷³A similar phenomenon is seen in the special numeral constructions for ‘*au* “sugar-cane thatch,” wherein a null multiplier with a value of two seems to occur after 2000, so that *ha au 'e taha afe* means “two thousand pieces of sugar-cane thatch,” despite the fact that elsewhere *taha afe* means “one thousand.”

TABLE 17: PATTERNS IN SPECIAL NUMERAL CONSTRUCTIONS

	<i>'ufi</i> 'yam'	<i>'ika</i> 'fish'	<i>niu</i> 'coconut'
1	<i>fo'i ... 'e taha</i> fruit-of ... SBJV one	<i>mata'i ... 'e taha</i> eye-of ... SBJV one	<i>fo'i ... 'e taha</i> fruit-of ... SBJV one
2	<i>fo'i ... 'e taha</i> <i>nga'ahoa</i> fruit ... SBJV one pair	<i>mata'i ... 'e taha</i> <i>nga'ahoa</i> eye-of ... SBJV one pair	<i>taua'i ... 'e taha</i> pair-of ... SBJV one
4	<i>fo'i ... 'e ua nga'ahoa</i> fruit ... SBJV two pair	<i>mata'i ... 'e ua</i> <i>nga'ahoa</i> eye-of ... SBJV two pair	<i>taua'i ... 'e ua</i> pair-of ... SBJV two'
20	<i>kau ... 'e taha</i> 20 ... SBJV one		\emptyset ... 'e <i>tekau</i> \emptyset ...SBJV one-20
40	<i>kau... 'e ua</i> 20 ... SBJV two		\emptyset ... 'e <i>uangakau</i> \emptyset ...SBJV two-20
200	<i>kau ... 'e hongofulu</i> 20 ... SBJV ten		\emptyset ... 'e <i>tefua</i> \emptyset ... SBJV one-200
400	<i>kau ... 'e uofulu</i> 20... SBJV two-ten		\emptyset ... 'e <i>uofua</i> \emptyset ... SBJV two-200
2k	<i>kau ... 'e teau</i> 20 ... SBJV 100		\emptyset ... 'e <i>teau</i> 20... SBJV 100 [†]
4k	<i>kau ... 'e uangeau</i> 20 ... SBJV two-100		\emptyset ... 'e <i>uangeau</i> 20... SBJV two-100 [†]
[†] The value expressed by these numerals is 20 times what it appears to be compositionally, suggesting the presence of a null aspectual marker meaning '20.'			

There are two ways in which special numerals provide insight into the structure of modifying numerals in Tongan. First, the interaction of the special aspect markers with the numeral to new numeric value tells us something about the structural relation between Asp⁰ in the left periphery of the nominal expression and numerals on the right. Secondly, the existence of

compound and special numerals in some of these constructions provides clues about the internal structure of numeral phrases.

The special nominal aspect markers seem to be able not only to mark a set as singleton or plural, but even to mark it as being of a specific size. *Taua 'i* marks a set as having exactly two members, and *kau* as having exactly 20. The total count is a multiple of the numeric values of the special aspect marker and the numeral. This interaction arises because the numeral clause is adjoined to – and thus modifies – not NP but outer AspP. Thus, the units being counted by Nume^0 are not the individuals denoted by N^0 but the sets (singletons, pairs, or scores) denoted by outer AspP.

Within Nume^0 , the adjunction of a multiplier creates compound numerals; some of these are more fused and are thus spelled out as portmanteaux, while others are less fused and are spelled out as a two-word, numeral-multiplier sequence. These follow a pattern similar to that seen in ordinary numerals, in which low powers of ten (10s and 100s) yield portmanteau morphemes, and higher powers of ten (1000s and up) yield sequences consisting of an integer and a free-standing power-of-ten multiplier. Assuming that the same syntactic structure yields both portmanteaux and two-word numerals, and given the inherent predicative nature of numerals in Tongan, I propose that both the portmanteaux and the two-word numerals are regular compounds generated syntactically as two verbs conjoined under a single V^0 .

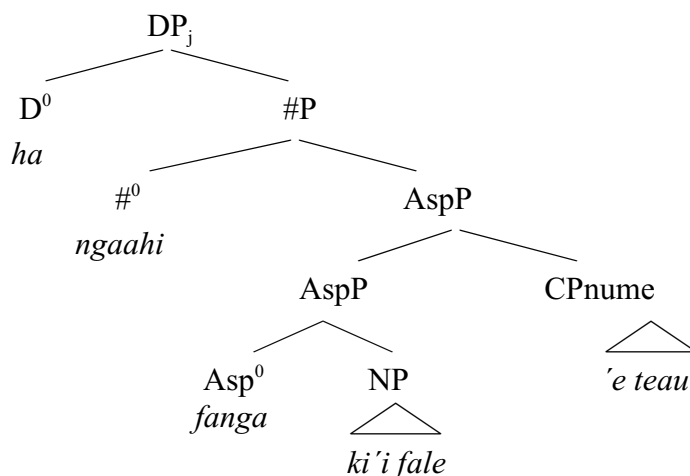
4.4.3. Numerals as adjuncts to nominal aspect

As we have seen in the preceding sections, nominal aspect mediates between number and the head noun. It specifies and modifies *Seinsart* information about the latter; in some cases rendering the noun countable, and in others indicating that it represents a singleton or non-singleton set. Number then acts on the modified *Seinsart*, indicating a plurality of individuals items or of sets. This mediation by aspect reflects the intermediate position Asp^0 occupies between $\#^0$ and N^0 . How then to reflect that numerals, which appear to the right of N^0 also

interact with aspect in very direct ways, even – as is made clear in the special numeral constructions – numerating the aspectually created sets, such that a numeral and an aspect marker with a particular numerical value can interact to create a higher numerical value? I propose that this falls out naturally from the adjunction of CP_{NUME} to outer AspP. Figure 18, below, illustrates the basics of this proposal.

FIGURE 18: DP WITH MODIFYING NUMERAL

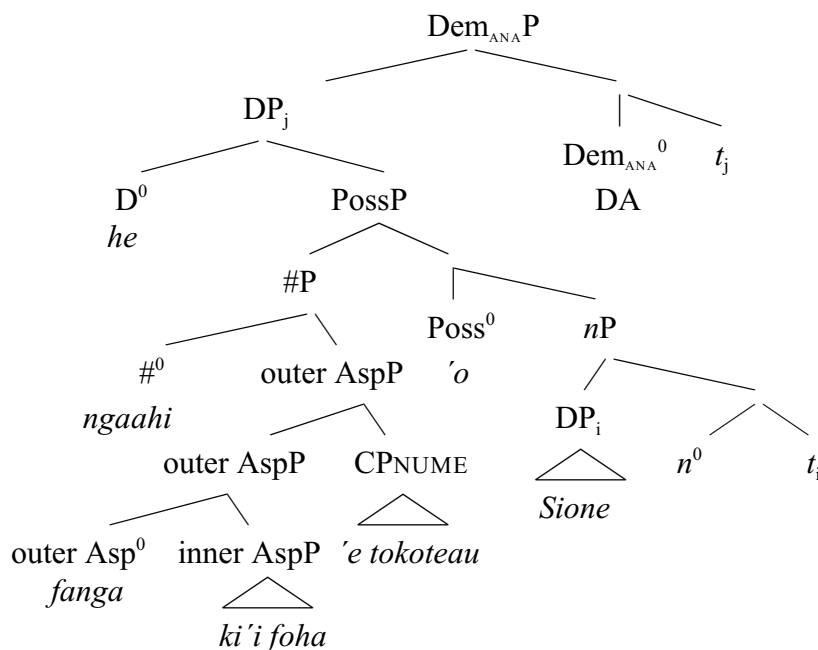
ha ngaahi fanga ki'i fale 'e teau
 NONSPEC PL ASP small house SBJV 100
 '100 little houses'



As can be seen from Figure 18, treating CP_{NUME} as an adjunct of (outer) AspP (I assume right adjunction) generates the low-numeral word order observed in section 4.3.4, wherein the numeral clause follows other modifiers within NP (*i.e.* light relative clauses and adjectives). In order for the numeral clause in this position to precede a possessor (as well as the definite accent), PossP needs to occupy a high position. I propose that it is immediately dominated by DP; its external argument is #P, which moves (as discussed in Chapter 3) from an internal position (within *nP*) to [Spec, PossP]. This is illustrated in Figure 19, below.

FIGURE 19: $DEM_{ANA}P$ WITH MODIFYING NUMERAL AND POSSESSOR

he ngaahi fanga ki'i foha 'e tokoteau 'o Sione
 SPEC PL ASP small son SBJV CLS-100 GEN_{OBJ} John-DA
 'John's three sons.'



It was observed in the preceding section that there are cases in which the position of the numeral clause may alternate with that of an adjective. To allow this, I propose that adjectives have two available adjunction sites – either to NP or to outer AspP.

Allowing adjectives to variously modify either NP or outer AspP seems to predict a subtle difference in meaning, in which adjectives sometimes directly modify the individuals within a set and at other times modify the set as a whole. In fact, this does seem to be the case; when post-nominal *lahi*, 'large,' and *si'i*, 'small' function as what I call *quantificational adjectives*, they modify outer AspP.¹⁷⁴ In (199a), *lahi* modifies the individual singers, indicating that they are large or tall. In (199b), it modifies the set of singers, indicating that there are many of

¹⁷⁴Similarly, Kayne (2007) proposes that the English quantifiers *many* and *few* are in fact the spellout of BIG and SMALL modifying $\#^0$.

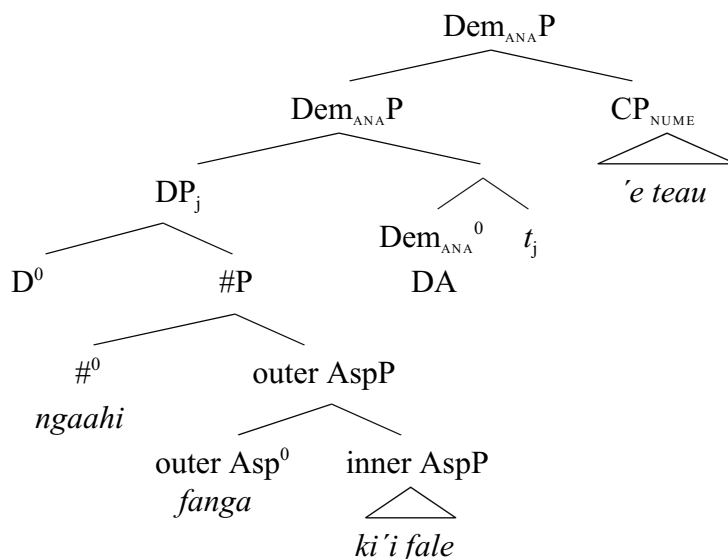
them. Note that in (199a), the first syllable of *lahi* is reduplicated, indicating the pluractionality of bigness, whereas in (199b), there is no such reduplication; instead, the classifier *toko-* is affixed to *lahi*.

- (199) a. *he ngaahi kau hiva lalahi*
 SPEC PL ASP sing **RED-big**
 ‘Some groups/choirs of large singers’
 (*consultant’s comment*: “The singers are big, tall people.”)
- b. *he ngaahi kau hiva tokolahi*
 SPEC PL ASP sing **CL-big**
 “Some large choirs/groups of singers”
 (*consultant’s comment*: “There are many singers in each group.”)
 (FN:LMK 2012)

Another word-order option described above is with the numeral in the right periphery of a nominal phrase, following even the definite accent. I propose that there is an alternative adjunction site for numeral clauses – adjoined to $\text{Dem}_{\text{ANA}}\text{P}$, as shown in Figure 20. In this position, the numeral is actually higher than DP, despite appearing to the right of it.

FIGURE 20: $Dem_{ANA}P$ WITH MODIFYING NUMERAL ADJOINED IN HIGH (RIGHTWARD) POSITION

he ngaahi fanga ki'i falé 'e teau
 SPEC PL ASP small house-DA SBJV three
 "The 100 little houses."



It was noted in section 4.4.1 that the relative order of post-DA numerals and heavy relative clauses alternates. This suggests the possibility of multiple adjunction, allowing both to be adjoined to $Dem_{ANA}P$.¹⁷⁵ Similarly, in cases where an adjective follows a numeral clause (to the left of Dem_{ANA}^0) it is possible either that the numeral is adjoined to NP, and only the adjective is adjoined to *outer AspP*, or that both the numeral and the adjective are adjoined to *outer AspP*.

Here I return to the differences seen between (179) and (180) (repeated below as (200) and (201), respectively). In (200), the relative clause may precede or follow the numeral, but in (201), the numeral must precede the relative clause. Moreover, in (200), *toko-* is mandatory, but in (201), it is necessarily absent, despite the fact that both nominals are ontologically animate. I propose that this is because of a difference in the syntactic structures of *kau fefine*

¹⁷⁵ Alternatively, one may be adjoined to DP and subsequently stranded on the right of the definite accent when DP undergoes roll-up movement from [Comp, Dem_{ANA}^0] to [Spec, $Dem_{ANA}P$].

‘women’/*kau hiva* ‘choir,’ and *kulupu hiva* ‘choir.’ *Kau fefine* and *kau hiva* are AspPs, wherein the Aspect marker *kau* indicates a collective set with the grammatical property [+HUMAN]. *Kulupu hiva*, in contrast, is a compound noun in which the head, *kulupu* ‘group,’ is a grammatically non-human Singular Object noun. Thus, *kulupu hiva* is pluralized directly by *ngaahi* and does not require the classifier *toko-* in numeral constructions. Moreover, the numeral modifying *kulupu hiva* is adjoined directly to the NP. This accounts for the fact that the numeral in (200) must immediately follow the nominal, preceding other modifiers such as relative clauses.

- (200) a. *Ko e kau fefine 'e toko tolu te nau lea 'i he fakataha*
 PRED SPEC ASP **woman** SBJV CLS **three** SBJV 3.PL speak DAT SPEC meeting
'apongipongi.
 tomorrow.
 ‘These are the three women who will speak at the meeting tomorrow.’
- b. *Ko e kau fefine te nau lea 'i he fakataha 'apongipongi*
 PRED SPEC ASP **woman** SBJV 3.PL speak DAT SPEC meeting tomorrow
'e toko tolu.
 SBJV CLS **three**
 ‘These are the three women who will speak at the meeting tomorrow.’
 (FN:LMK 2012)

- (201) a. *Na'a ku fanongo ki he ngaahi kulupu hiva 'e nimá*
 PAST 1EX.SG listen DAT SPEC PL **group sing** SBJV **five-DA**
te nau hiva 'i he fe'auhi.
 SBJV 3.PL sing DAT SPEC competition
 ‘I listened to the five choirs who will sing in the competition.’
- b. **Na'a ku fanongo ki he ngaahi kulupu hiva te nau hiva 'i he*
 PAST 1EX.SG listen DAT SPEC PL **group sing** SBJV 3.PL sing DAT SPEC
fe'auhi 'e nimá.
 competition SBJV **five-DA**

- c. **Na'a ku fanongo ki he ngaahi kulupu hiva te nau hiva 'i he*
 PAST 1EX.SG listen DAT SPEC PL **group sing** SBJV 3.PL DAT SPEC
fe'auhi 'e nima.
 competition-DA SBJV **five**

(FN:LMK 2013)

A wrinkle emerges when we reconsider data such as (202). Here, despite the presence of a collective nominal aspect marker, the numeral still seems to be counting individuals. Note that the translation in (202) does not refer to three groups of sons but to three individual boys.

- (202) *'Oku sio ki he ngaahi fanga ki'i foha 'e toko tolu faka'ofa'ofa*
 PRES see DAT SPEC PL ASP **small son** SBJV CLS **three** beautiful
'o Sione
 GEN_{OBJ} John-DA
 "I saw John's three beautiful little boys."

(FN:LMK 2013)

It is arguable that in data such as (202), as in (201), the numeral clause is adjoined directly to the NP (*ki'i foha*, 'little boy'), rather than to the AspP *fanga ki'i foha* 'little boys.' However, as seen earlier (examples (182, 183), both the presence of *toko-* and the reference to three individual boys (rather than groups of boys) holds even when the numeral appears after a post-nominal adjective, possessor, or the definite accent. Thus, a numeral seems to be able to quantify over the group(s) created by outer Asp⁰, as seen in the special numeral constructions, or the individuals within them. A possible source of this variability is the index on PRO: Perhaps it is variably co-indexed either with outer AspP (reflecting quantification over groups), or with inner AspP or NP (reflecting quantification over individuals). Perhaps context and pragmatics play a role; how can they be represented syntactically? These questions are left open for future exploration.

4.5. Chapter Summary

With its rich inventory of inner and outer nominal aspect markers, Tongan offers fertile ground for the study of nominal aspect and its interactions with *Seinsarten*, number, and numerals. Many of these nominal aspect markers have been previously treated as number markers, but their ability to co-occur with number, as well as their richer semantics – some impart animacy to the nouns they modify, and others convey distributivity or cohesiveness – provide clues as to their true nature. Furthermore, Tongan nominal expressions have two distinct aspect projections: Inner aspect is the locus of [SHAPE]; the inner aspect markers *fo'i* “fruit-of” and *mata'i* “eye-of” provide individuation to general nouns, converting them to set nouns. Outer aspect is the locus of [HOMOGENEITY], and outer aspect markers differentiate between singleton and collective sets, thereby deriving plural and singular count nouns. Singleton outer aspect is marked with a null particle, deriving single-object nouns. Collective outer aspect markers, which have previously been mistaken as plural markers, not only mark sets as non-singular, but they also classify nouns according to whether they are human (*kau*), inanimates (*'ū*), or members of a diminutive class (children, animals, nouns preceded by *ki'i* “small”). Both singleton sets (single-object nouns) and collective sets can be pluralized by the number marker *ngaahi*, imparting the sense of multiple individuals (in the former case) or multiple groups (in the latter case).

Nominal aspect also interacts with numerals. Numerals in Tongan are clausal modifiers of outer aspect phrases. Thus, they are able to quantify over groups. Some special numeral constructions employ outer nominal aspect markers that not only derive set nouns, but precisely specify the size of those sets in terms of their numerical value. It is these sets over which the numeral then quantifies, yielding a total quantity equal to the product of the values of Asp^0 and the numeral.

While nominal aspect markers perform some of the same functions as classifiers as analyzed by Borer (2005) and others, both individuating and classifying nouns, they do more than such a model would predict. Moreover, they are not limited in their distribution to quantified

nominal expressions, *i.e.* those containing numerals or quantifiers. The prefix *toko-*, however, more closely resembles the numeral classifiers found elsewhere. While it lacks the individuating function normally associated with classifiers (Lyons 1977, Grinevald 2000, Borer 2005), it occurs, like classifiers in other languages, adjacent to numerals and quantifying adjectives, and it classifies nouns according to animacy (*toko-* marks nouns as animate; I propose that it has a null counterpart for inanimate nouns). Syntactically, I treat it as a “true” classifier. I propose a structure for numeral clauses in which a classifier and PRO (controlled by the head noun from outside of the numeral clause) form a constituent which serves as an argument for the numeral predicate. Here, again, we see the same type of roll-up movement described in the previous two chapters; in this case, it is the CLP containing PRO which moves from [Comp, Nume⁰] to [Spec, NumeP].

Chapter 5

Conclusions and Avenues for Future Research

In the foregoing exploration of Tongan nominal expressions, I have endeavoured to examine a number of different elements within nominal expressions and the relations among them. I have paid particular attention to the functional heads in the left periphery (determiners, including pre-nuclear possessive pronouns; number markers; and what I have called *nominal aspect* markers) and those in the right periphery (demonstrative clitics, including the definite accent, and universal quantifiers). I have also looked at several post-nominal modifying elements: post-nuclear possessors, numerals, and what I have called *quantifying adjectives*. Through this, several themes have emerged, and I elaborate on three of those below (section 5.2): quantification, classification, and long-distance dependencies (real and apparent) between pre- and post-nominal material, including between elements in the two peripheries. Before addressing those themes, however, I present a discussion of some of the lingering questions and avenues for further research that were raised in this dissertation but whose solutions fell outside of its scope (section 5.1).

5.1. Lingering questions

Through this dissertation, I have attempted to elucidate and analyze a number of elements within Tongan nominal expressions and the relations among them. In the course of doing so, I uncovered many questions which, due to limitations of scope and time, were left unanswered. The answers to some of these questions may pose challenges to the analyses herein; others may strengthen them. Some questions are simply matters of empirical or theoretical curiosity or signposts for avenues to further research.

5.1.1. Questions about post-nominal modifiers

Tongan has a number of post-nominal modifiers that were touched on but not examined in detail in this dissertation – adjectives, relative clauses, and prepositional phrases, in particular. Much more research is needed to discover the internal structures of these elements, their structural relation to the rest of the nominal expression, which elements can (and cannot) co-occur, and how they are ordered relative to one another and to other post-nominal elements such as numerals, possessors, and demonstratives. My consultant's own judgements seemed variable, suggesting that there is a significant amount of scrambling in the post-nominal domain, but that it is governed by subtle rules that may relate to pragmatics, style, and/or prosody.

5.1.2. Questions about the definite accent

In Chapter 2, I examined the articles *he*, *ha*, *si'i*, and *si'a*; the demonstratives *-ni* and *-na*; and the definite accent (DA). I proposed that the articles are determiners, occupying D^0 , and encoding specificity (and diminutivity), and licensing nominal expressions as arguments; that the spatial demonstratives are merged within NP (although I did not elaborate precisely on their syntax); and that the DA, while historically a member of the same demonstrative paradigm as *-ni* and *-na*, has been grammaticalized as an anaphoric demonstrative, merged in the left periphery of the nominal expression, encoding purely anaphoric deixis, and as such is the locus of definiteness in Tongan. This leaves open some interesting questions: For example, is anaphoric deixis semantically and/or pragmatically identical to definiteness? If both spatial and anaphoric deixis/definiteness mandate the presence of a [SPECIFIC] feature on D^0 , why is the former but not the latter merged adjacent to DP? If definiteness in Tongan is not associated with D^0 , what are the unifying characteristics of determiners and the D^0 position, cross-linguistically?

5.1.3. Questions about the nature of nominal aspect and its relationship to other types of classification

In Chapter 4, I develop a proposal to account for the wide variety of pluralizers in Tongan, as well as the pre-nominal particles used in special numeral constructions, by treating them as nominal aspect markers, which modify the lexical Seinsart of nouns by adding specification for shape and homogeneity. In doing so, I have drawn heavily on the work of Rijkhoff (2002), who proposed Seinsart and nominal aspect as grammatical phenomena related to countability and numeral classifiers. By manipulating the features [SHAPE] and [HOMOGENEITY], nominal aspect markers can differentiate between individuals, groups, and substances.

However, I note that certain nominal aspect markers of Tongan (and other languages) seem to impart additional characteristics such as animacy (or humanness) (although, as Wiltschko (2012) notes, some qualities which are not ontologically associated with countability – such as animacy in Blackfoot – do seem to be so grammatically). They may also specify the precise number of individuals in a group, as do some of the pre-nominal particles in the special numeral constructions of Tongan. Others have an additional classifying function, being limited to use with very specific denotata, such as yams or pieces of roof-thatch. These qualities lead to questions about what sort of elements the nominal aspect markers are. Are they purely grammatical/functional, or are they lexical? Are they, somehow, lexical items instantiating functional heads? Further research is needed to define (and delimit) nominal aspect markers, to understand the relationship between countability and classification, and to understand how classificatory features not ontologically associated with countability can be so grammatically. In addition, further research is needed to understand the relationship between aspectual classification and numeral classification, exemplified by *toko-*, in which a classifier appears adjacent to a numeral rather than the classified noun.

5.1.4. Questions about quantifying adjectives

Also in Chapter 4, I noted that certain adjectives in Tongan exhibited characteristics similar to numerals. Specifically, when post-nominal *lahi* “big” or *si’i* “small” is used to indicate the size of one or more animate individuals, it requires the [ANIMATE] classifier *toko-*. However, it may also be used with a collective nominal to indicate the size of the group, in which case *toko-* is not used. This suggests that these adjectives, which I refer to as *quantifying adjectives*, function somewhat like numerals. However, they do not function entirely like numerals; for instance, they do not appear with the complementizer *’e* that is required in numeral constructions. Moreover, the quantifying adjective, adjoined to an outer aspectual head, seems to be able to sometimes “look inside” its complement and quantify over individuals (thus modifying their size) and other times does not do so (instead, modifying the size of the group). Numerals – at least in the special numeral constructions – do not seem to have this flexibility; they modify the number of groups, not the number of individuals in a group. More research is needed to understand the lexical and structural similarities and differences between quantifying adjectives and numerals, and whether numerals in ordinary numeral constructions have the same flexibility as quantifying adjectives (in which case, their inflexibility in special numeral constructions might simply be due to fossilization of the form).

5.2. Emerging Themes

In the course of this exploration of nominal expressions in Tongan, several themes emerged. One of these – the underlying locality of various apparent long-distance relations – was made explicit throughout. Two other themes, quantification and classification, were implicit. I present here a brief overview of all three.

5.2.1. Quantification

This dissertation reveals that there are many means and loci of quantification in Tongan nominals. In Chapter 2, I looked at the universal quantifiers *kātoa* and *kotoa* and argued that, as Q-quantifiers, they are merged as the highest projection within nominal expressions, scoping over all other elements. Certain of their characteristics, such as the ability to participate in so-called quantifier float, are consistent with that of universal quantifiers in English. Because they occupy a unique position within nominal expressions and are the only elements that undergo quantifier float, I proposed that they are the only “true” quantifiers, *i.e.* Q-quantifiers, in the language.

However, despite the paucity of Q-quantifiers, the language is rich in options for quantification. In Chapter 4, I discussed the quantifying adjectives, *si'i* and *lahi*, which literally mean ‘small’ or ‘large’ but which, as post-nominal modifiers, may also mean ‘few/little’ or ‘much/many,’ respectively. This, I proposed, occurs when they modify nominal aspect. In addition to these, quantification occurs in Tongan via numerals, number markers, and nominal aspect markers. Of particular interest are the outer aspect markers which express plurality by specifying whether or not a Set nominal has the feature [HOMOGENEITY], hence whether it is a singleton or collective set. Some of these, *i.e.* *kau* ‘20’ and *taua'i* ‘pair-of,’ have very precise quantificational functions, not only specifying that a set is non-homogeneous but quantifying it in terms of the number of its members. Even the ordinary nominal aspect markers seem to have a quantificational function beyond simply indicating whether a set contains just one member or more than one; as noted in Chapter 2, the pluralizing aspect marker *'ū* “more naturally suggest[s] a smaller number of things” than *ngaahi* (Churchward 1953:29). Quantification, therefore, can occur simultaneously in several places within a single nominal expression; it would be interesting to explore in more detail what kinds of interactions this yields.

5.2.2. Classification

Just as there is only one Q-quantifier in Tongan but many other means of expressing quantification in the language, there are many means and loci of classification within Tongan nominal expressions despite the fact that there is only one overt numeral classifier in the language. In this dissertation, I limited the use of the word *classifier* to refer to the numeral classifiers, *toko-* and \emptyset . Numeral classification is, According to Allan (1977) the “paradigm case” of classification. In Tongan, *toko* and \emptyset classify nouns according to animacy; however classification is also seen in nominal aspect markers, special numerals, and genitive case markers. Nominal aspect and numeral classification are particularly entwined: Both have sortal, grouping, and individuating functions.

Aspectual markers re-classify nouns by modifying their shape and homogeneity, but the choice of one or another aspect marker with the same function is often governed by other characteristics inherent to the denotatum of a noun: Pluralizing aspect markers classify nouns according to the humanness, size, or endearment to the speaker; and aspect markers found in special numeral constructions specifically classify objects as fish, yams, pieces of thatch, and so on. All of the above types of classification are associated with quantification, as classification often is cross-linguistically.

Moreover, Tongan also employs classification in genitive constructions via the *'a* and *'o* genitive case markers. This seems to be a kind of hybrid classification based on both the function of an item and its normal relationship to a possessor. These case markers have their origins in what Lichtenberk (1983, 2009) calls *relational classification*, in which a nominal is classified according to the relationship between its denotatum and its possessor, but they seem to have undergone some degree of fossilization, yielding more-or-less stable noun classes. Furthermore, they seem to have been conflated with another form of classification found in other Oceanic languages (Grinevald 2000), wherein multiple genitive case markers classify culturally significant items according to their function – food, drink, boat, tool, *etc.* This classification and a certain degree of fossilization have resulted in a situation where

there are two (albeit somewhat flexible) noun classes which are not reflected in the choice of numeral classifier or outer aspect marker but in the expression of possession.

5.2.3. Long-distance relations

The explicit theme of this dissertation is the prevalence of what appear to be long-distance relations between elements in the left periphery of nominal expressions and post-nominal elements, including those in the right periphery. A number of these apparent long-distance relations are shown to in fact be underlyingly local. For example, the relation between definiteness and specificity, at the surface, holds across a long distance between the determiner in the left periphery and the definite accent in the right periphery. However, this is proposed to be a consequence of the type of roll-up that is found in a variety of Polynesian languages, and perhaps also in other V-initial languages such as Irish (see McCloskey 2004). A similar relation holds amongst Q-quantifiers and related elements in the left periphery such as determiners and nominal aspect markers. Again, a roll-up operation which strands Q at the right edge of the nominal phrase creates the appearance of long-distance relations where there are, in fact, local ones.

Another type of apparent long-distance relation holds between aspect and number marking, in the left periphery, and modifying numerals, near the right edge of the post-nominal domain. However, the special numeral constructions in Tongan provide evidence that, in this language, numerals do not modify nouns directly but, rather, the aspectual phrases that contain them. It appears that numerals are right-adjoined to AspPs, yielding an underlyingly local but superficially distant relation.

Finally, there appears to be a long-distance relation between the pre- and post-nuclear possessor positions, but again this can be shown to result from a series of local relations and movements. Recall that the pre-nuclear possessor, which consists of a determiner and a clitic pronoun, resides in D^0 , a left-peripheral position. A double of this clitic (overt or null)

appears post-nominally, after other modifiers. The following series of events gives rise to this apparent long-distance relation: First, the possessum and possessor are merged as the complement and specifier, respectively, of an *nP* whose head is null, establishing the possessive relation. This *nP* is merged as a complement of Poss^0 , which in turn heads the complement of D^0 . Within *nP*, the possessor, a *KP*, is headed by a genitive case particle; a clitic is formed in K^0 by a local (internal) agreement relationship with the possessor's φ^0 . This clitic moves leftward to D^0 passing over only the null Poss^0 ; this is local movement within the left periphery of the larger nominal expression. Following this, *#P*, the possessum, undergoes movement from [*Comp*, n^0] to [*Spec*, *PossP*] – again, a local movement from the complement of one projection to the specifier of an adjacent projection). Because *#P* is a robust projection including number and aspect markers as well as the head nominal and NP-internal post-nominal modifiers, this creates a long linear distance between the clitic and its double.

5.3. Significance

In this dissertation, I have enumerated and formalized the syntax of various elements within Tongan nominal expressions. The primary foci of this dissertation were determiners, the definite accent, possessors, markers of number and nominal aspect, and numerals. In addition to examining them individually, I have shown a number of apparent long-distance relations amongst these elements to be underlyingly local.

I have decomposed the determiners of Tongan and shown them not to be the locus of definiteness, and I have analyzed the definite accent as an anaphoric demonstrative in a local relation with D^0 . The definite accent has been widely discussed from morphophonological and historical perspectives, little attention has been paid to it as a syntactic phenomenon. My analysis accounts for the linear position of the definite accent at the right edge of the nominal expression. It also allows the cross-linguistically observed dependency of definiteness on specificity to be preserved, while also showing that they need not be associated with the same

syntactic position. By arguing that the definite accent is the sole locus of definiteness in Tongan and that the *he/ha* distinction is better treated as one of specificity, I account for the distribution of *he* with and without the definite accent and resolve the vexing issue of definiteness being encoded both in the determiner system and in the definite accent.

I have also decomposed the rich paradigm of Tongan pronouns according to their internal syntax and the feature geometries of ϕ . In doing so, I have accounted for both the proliferation of pronominal categories and the morphological complexity of pronouns in the language by showing them to be syntactically derived. Within this context, I have provided a formal account of the generation of clitic possessors in D^0 . This accounts for the co-existence of two series of possessive pronouns – one pre-nuclear and one post-nuclear, as well as for their optional co-occurrence and the apparent long-distance dependency that exists between them. In doing so, I have extended Roberts' (2010) analysis of European pronominal clitics, showing that the same mechanism can account for a very different phenomenon in an unrelated language. Furthermore, by developing a predication-based analysis of possessive structures in the language, I have elucidated a number of parallels between nominal and verbal phrases in Tongan.

Another significant contribution of this dissertation is a new analysis of what have been traditionally treated as “number markers” in the literature on Tongan, showing that many of them can be better treated as markers of nominal aspect. In developing this analysis, I have elaborated and formalized the theory of nominal aspect, originated by Rijkhoff (2002). I have decomposed the nominal aspect markers of Tongan according to how they modify the nominal *Seinsart* features of [SHAPE] and [HOMOGENEITY]. I have proposed a syntactic structure that includes both inner and outer nominal aspect, associating [SHAPE] and [HOMOGENEITY] with different syntactic positions. This analysis accounts for the co-occurrences – and co-occurrence restrictions – among number and nominal aspect markers in Tongan.

I have, of course, raised more questions than I have been able to answer, but it is my hope that this dissertation will offer some insight into and inspire more study of the syntax of this language – and that this, in turn, will inspire new insights into syntactic theory cross-linguistically.

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Appendix

Abbreviations Used in the Glosses

1EX	1 ST PERSON EXCLUSIVE
1INC	1 ST PERSON INCLUSIVE
2	2 ND PERSON
3	3 RD PERSON
ABS	ABSOLUTE CASE
ASP	ASPECT
BEN	BENEFACTIVE
CL	CLASSIFIER
COLL	COLLECTIVE
COMP	COMPLEMENTIZER
CONJ	CONJUNCTION
D	DETERMINER
DA	DEFINITE ACCENT
DAT	DATIVE
DEM _{ANA}	ANAPHORIC DEMONSTRATIVE
DEM _{SP}	SPATIAL DEMONSTRATIVE
DEM _{SP} .1	PROXIMAL (FIRST-PERSON) SPATIAL DEMONSTRATIVE

DEM _{sp.2}	DISTAL (SECOND-PERSON) DEMONSTRATIVE
DU	DUAL
EMPH	EMPHATIC
ERG	ERGATIVE
GEN _{OBJ}	GENITIVE-OBJECTIVE
GEN _{SBJ}	GENITIVE-SUBJECTIVE
NONSPEC	NONSPECIFIC
PL	PLURAL
PRED	PREDICATIVE/PRESENTATIONAL
PRES	PRESENT
PERF	PERFECTIVE
Q	UNIVERSAL QUANTIFIER
RED	REDUPLICANT
REINF	REINFORCER (DEMONSTRATIVE)
SG	SINGULAR
SING	SINGULATIVE
SPEC	SPECIFIC
SBJV	SUBJUNCTIVE
TRANS	TRANSITIVIZER